

EPA I.D. NUMBER (copy from Item 1 of Form I)

FORM
2B
NPDES

EPA

U.S. ENVIRONMENTAL PROTECTION AGENCY
APPLICATIONS FOR PERMIT TO DISCHARGE WASTEWATER
CONCENTRATED ANIMAL FEEDING OPERATIONS AND AQUATIC ANIMAL PRODUCTION FACILITIES

I. GENERAL INFORMATION

Applying for: Individual Permit

Coverage Under General Permit

A. TYPE OF BUSINESS

B. CONTACT INFORMATION

C. FACILITY OPERATION STATUS

1. Concentrated Animal Feeding Operation (complete items B, C, D, and section II)
2. Concentrated Aquatic Animal Production Facility (complete items B, C, and section III)

Owner/or
Operator Name: Murphy-Brown LLC
Telephone: (804) 834-2109
Address: P.O. Box 1240
Facsimile: (804) 834-8926
City: Waverly State: VA Zip Code: 23890

1. Existing Facility
 2. Proposed Facility

D. FACILITY INFORMATION

Name: Murphy-Brown LLC Farm 9,10 and 21 Telephone: (804) 834-2109
Address: 4315 Martin Luther King Hwy Facsimile: (804) 834-8926
City: Waverly State: Virginia Zip Code: 23888
County: Surry Latitude: 37 deg. 06 min. 45 sec. Longitude: 77 deg. 01 min. 29 sec.

If contract operation: Name of Integrator: N/A
Address of Integrator: N/A

II. CONCENTRATED ANIMAL FEEDING OPERATION CHARACTERISTICS

A. TYPE AND NUMBER OF ANIMALS

B. MANURE, LITTER, AND/OR WASTEWATER PRODUCTION AND USE

1. TYPE	2. ANIMALS	
	NO. IN OPEN CONFINEMENT	NO. HOUSED UNDER ROOF
<input type="checkbox"/> Mature Dairy Cows		
<input type="checkbox"/> Dairy Heifers		
<input type="checkbox"/> Veal Calves		
<input type="checkbox"/> Cattle (not dairy or veal calves)		
<input checked="" type="checkbox"/> Swine (55 lbs. or over)		22,050
<input checked="" type="checkbox"/> Swine (under 55 lbs.)		9,450
<input type="checkbox"/> Horses		
<input type="checkbox"/> Sheep or Lambs		
<input type="checkbox"/> Turkeys		
<input type="checkbox"/> Chickens (Broilers)		
<input type="checkbox"/> Chickens (Layers)		
<input type="checkbox"/> Ducks		
<input type="checkbox"/> Other: Specify _____		
3. TOTAL ANIMALS		31,500

C. <input checked="" type="checkbox"/> TOPOGRAPHIC MAP		
D. TYPE OF CONTAINMENT, STORAGE AND CAPACITY		
1. Type of Containment	Total Capacity (in gallons)	
<input type="checkbox"/> Lagoon		
<input type="checkbox"/> Holding Pond		
<input type="checkbox"/> Evaporation Pond		
<input type="checkbox"/> Other: Specify _____		
2. Report the total number of acres contributing drainage: 323 acres		
3. Type of Storage	Total Number of Days	Total Capacity (gallons/tons)
<input checked="" type="checkbox"/> Anaerobic Lagoon	180	87,927,340 gals.
<input type="checkbox"/> Storage Lagoon		
<input type="checkbox"/> Evaporation Pond		
<input type="checkbox"/> Aboveground Storage Tanks		
<input type="checkbox"/> Belowground Storage Tanks		
<input type="checkbox"/> Roofed Storage Shed		
<input type="checkbox"/> Concrete Pad		
<input type="checkbox"/> Impervious Soil Pad		
<input type="checkbox"/> Other: Specify _____		
E. NUTRIENT MANAGEMENT PLAN		
Note: Effective February 27, 2009, a permit application is not complete until a nutrient management plan is submitted to the Permitting Authority.		
1. Please indicate whether a nutrient management plan has been included with this permit application. <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
2. If no, please explain:		
3. Is a nutrient management plan being implemented for the facility? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
4. The date of the last review or revision of the nutrient management plan. Date: 03/24/12		
5. If not land applying, describe alternative use(s) of manure, litter, and/or wastewater:		
F. LAND APPLICATION BEST MANAGEMENT PRACTICES		
Please check any of the following best management practices that are being implemented at the facility to control runoff and protect water quality:		
<input checked="" type="checkbox"/> Buffers <input checked="" type="checkbox"/> Setbacks <input checked="" type="checkbox"/> Conservation tillage <input type="checkbox"/> Constructed wetlands <input type="checkbox"/> Infiltration field <input checked="" type="checkbox"/> Grass filter <input type="checkbox"/> Terrace		

III. CONCENTRATED AQUATIC ANIMAL PRODUCTION FACILITY CHARACTERISTICS						
A. For each outfall give the maximum daily flow, maximum 30-day flow, and the long-term average flow.				B. Indicate the total number of ponds, raceways, and similar structures in your facility.		
1. Outfall No.	2. Flow (gallons per day)			1. Ponds	2. Raceways	3. Other
	a. Maximum Daily	b. Maximum 30 Day	c. Long Term Average	C. Provide the name of the receiving water and the source of water used by your facility.		
			1. Receiving Water		2. Water Source	
D. List the species of fish or aquatic animals held and fed at your facility. For each species, give the total weight produced by your facility per year in pounds of harvestable weight, and also give the maximum weight present at any one time.						
1. Cold Water Species				2. Warm Water Species		
a. Species	b. Harvestable Weight (pounds)			a. Species	b. Harvestable Weight (pounds)	
	(1) Total Yearly	(2) Maximum			(1) Total Yearly	(2) Maximum
E. Report the total pounds of food during the calendar month of maximum feeding.				1. Month	2. Pounds of Food	
IV. CERTIFICATION						
<i>I certify under penalty of law that I have personally examined and am familiar with the information submitted in this application and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.</i>						
A. Name and Official Title (print or type) Kraig Westerbeek - Assistant Vice President of Environment, Health, & Safety				B. Telephone (910) 393-3434		
C. Signature 				D. Date Signed 7-8-13		

INSTRUCTIONS

<p>GENERAL</p> <p>This form must be completed by all applicants who check "yes" to Item II-B in Form I. Not all animal feeding operations or fish farms are required to obtain NPDES permits. Exclusions are based on size and whether or not the facility discharges proposed to discharge. See the description of these exclusions in the CAFO regulations at 40 CFR 122.23.</p> <p>For aquatic animal production facilities, the size cutoffs are based on whether the species are warm water or cold water, on the production weight per year in harvestable pounds, and on the amount of feeding in pounds of food (<i>for cold water species</i>). Also, facilities which discharge less than 30 days per year, or only during periods of excess runoff (<i>for warm water fish</i>) are not required to have a permit.</p> <p>Refer to the Form I instructions to determine where to file this form.</p> <p>Item I-A See the note above to be sure that your facility is a "concentrated animal feeding operation" (CAFO).</p> <p>Item I-B Use this space to give owner/operator contact information.</p> <p>Item I-C Check "proposed" if your facility is not now in operation or is expanding to meet the definition of a CAFO in accordance with the CAFO regulations at 40 CFR 122.23.</p> <p>Item I-D Use this space to give a complete legal description of your facility's location including name, address, and latitude/longitude. Also, if a contract grower, the name and address of the integrator.</p> <p>Item II Supply all information in item II if you checked (1) in item I-A.</p> <p>Item II-A Give the maximum number of each type of animal in open confinement or housed under roof (either partially or totally) which are held at your facility for a total of 45 days or more in any 12 month period. Provide the total number of animals confined at the facility.</p> <p>Item II-B Provide the total amount of manure, litter, and wastewater generated annually by the facility. Identify if manure, litter, and wastewater generated by the facility is to be land applied and the number of acres, under the control of the CAFO operator, suitable for land application. If the answer to question 3 is yes, provide the estimated annual quantity of manure, litter, and wastewater that the applicant plans to transfer off-site.</p> <p>Item II-C Check this box if you have submitted a topographic map of the entire operation, including the production area and land under the operational control of the CAFO operator where manure, litter, and/or wastewater are applied with Form I.</p>	<p>Item II-D</p> <ol style="list-style-type: none"> 1. Provide information on the type of containment and the capacity of the containment structure (s). 2. The number of acres that are drained and collected in the containment structure (s). 3. Identify the type of storage for the manure, litter, and/or wastewater. Give the capacity of this storage in days. <p>Item II-E Provide information concerning the status of submitting a nutrient management plan for the facility to complete the application. In those cases where the nutrient management plan has not been submitted, provide an explanation. If not land applying, describe the alternative uses of the manure, litter, and wastewater (e.g., composting, pelletizing, energy generation, etc.).</p> <p>Item III Supply all information in Item III if you checked (2) in Item I-A.</p> <p>Item III-A Outfalls should be numbered to correspond with the map submitted in Item XI of Form I. Values given for flow should be representative of your normal operation. The maximum daily flow is the maximum measured flow occurring over a calendar day. The maximum 30-day flow is the average of measured daily flow over the calendar month of highest flow. The long-term average flow is the average of measure daily flows over a calendar year.</p> <p>Item III-B Give the total number of discrete ponds or raceways in your facility. Under "other," give a descriptive name of any structure which is not a pond or a raceway but which results in discharge to waters of the United States.</p> <p>Item III-C Use names for receiving water and source of water which correspond to the map submitted in Item XI of Form I.</p> <p>Item III-D The names of fish species should be proper, common, or scientific names as given in special Publication No. 6 of the American Fisheries Society, "A List of Common and Scientific Names of Fishes from the United States and Canada." The values given for total weight produced by your facility per year and the maximum weight present at any one time should be representative of your normal operation.</p> <p>Item III-E The value given for maximum monthly pounds of food should be representative of your normal operation.</p> <p>Item IV The Clean Water Act provides for severe penalties for submitting false information on this application form. Section 309(C)(2) of the Clean Water Act provides that "Any person who knowingly makes any false statement, representation, or certification in any application... shall upon conviction, be punished by a fine of no more than \$10,000 or by imprisonment for not more than six months, or both."</p> <p>Federal regulations require the certification to be signed as follows:</p> <ul style="list-style-type: none"> A. For corporation, by a principal executive officer of at least the level of vice president. B. For a partnership or sole proprietorship, by a general partner or the proprietor, respectively; or C. For a municipality, State, federal, or other public facility, by either a principal executive officer or ranking elected official. <p>Paper Reduction Act Notice The public reporting and recordkeeping burden for this collection of information is estimated to average 9.5 hours per response. The public reporting and recordkeeping burden for development of the nutrient management plan to be submitted with the form is estimated to average 58 hours per response. Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques to the Director, Collection Strategies Division, U.S. Environmental Protection Agency (2822T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460. Include the OMB control number in any correspondence. Do not send the completed form to this address.</p>

**VIRGINIA POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT
CONCENTRATED ANIMAL FEEDING OPERATIONS**

PERMIT APPLICATION ADDENDUM

PLEASE TYPE OR PRINT ALL INFORMATION - ALL PARTS OF THIS FORM MUST BE COMPLETED

For DEQ Use Only:
Complete: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Initials: _____
Date: _____

I. CONTACT INFORMATION

Owner Name:	Murphy-Brown LLC				
Mailing Address:	P.O. Box 1240				
City:	Waverly	State:	Virginia	Zip Code:	23890
E-Mail Address:	robritt@murphybrownllc.com				
Business Phone:	(804) 834-2109	Mobile Phone:	(804) 731-9603	Home Phone:	
Best day of the week & time to contact the applicant	Day(s)		Time(s)	<input type="checkbox"/> AM	
	Mon.- Fri.		8:00am – 5:00pm	<input type="checkbox"/> PM	

II. FARM/FACILITY INFORMATION

Farm/Facility Name:	Murphy-Brown LLC Farm 9, 10, and 21				
Location:	4315 Martin Luther King Hwy, Waverly, VA, 23888				
Does Farm/Facility have an existing permit?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	If yes, Permit Number:	VPA00574	

III. FARM OPERATING MANUAL

- A. Operating Manual been developed for this facility? Has a Farm
 Yes No
- B. If yes, provide the date of the last review/revision of the Farm Operating Manual. Date: _____
- C. A copy of the Manual (if already developed) is attached: Yes No.
The attached copy may be a hard copy or an electronic copy.

IV. GROUNDWATER MONITORING PLAN

- A. If the facility has an existing permit, is groundwater monitoring required? Yes No
- B. Groundwater Monitoring Plan been developed for this facility? If yes, has a
 Yes No ? N/A
- C. If yes, provide the date of the last review/revision of the Groundwater Monitoring Plan. Date: _____
- D. If no, please explain: A geophysical analysis of the site is underway to establish the framework to develop a new groundwater monitoring plan.

E.

A copy of the Plan (if already developed) is attached:
The attached copy may be a hard copy or an electronic copy.

? Yes No N/A

IV. DISCHARGE POINT AND BEST MANAGEMENT PRACTICES (BMPs) RELATED TO A DISCHARGE POINT

For each discharge point, provide the following information in the table below:

- a) a descriptive name of the discharge point;
- b) the latitude and longitude of its location;
- c) the name of the nearest potential receiving water;
- d) all areas contributing manure, litter, process wastewater, or storm water from the facility; and
- e) the treatment received or BMPs utilized, installed or constructed prior to the discharge point.

For DEQ User ID Number	Discharge Point	Latitude	Longitude	Name of Nearest Potential Receiving Water	Area Contributing Flow	Treatment or BMPs
1	37°6'41.84" N	77°2'41.99" W	Unknown tributary to Otterdam Creek	Production Area – Farm 9	Secondary Containment	
2	37°6'41.39" N	77°2'50.13" W	Unknown tributary to Otterdam Creek	Production Area – Farm 9	Secondary Containment	
3	37°6'34.13" N	77°2'47.59" W	Unknown tributary to Otterdam Creek	Production Area – Farm 10	Secondary Containment	
4	37°6'51.80" N	77°1'56.83" W	Unknown tributary to Otterdam Creek	Production Area – Farm 10	Secondary Containment	
5	37°6'43.82" N	77°2'06.40" W	Unknown tributary to Otterdam Creek	Production Area – Farm 10	Secondary Containment	
7	37°6'33.52" N	77°2'21.33" W	Unknown tributary to Otterdam Creek	Production Area – Farm 21	Secondary Containment	
8	37°6'22.34" N	77°2'18.08" W	Unknown tributary to Otterdam Creek	Production Area – Farm 21	Secondary Containment	

V. BEST MANAGEMENT PRACTICES (BMPs)

- A. BMPs are utilized, installed or constructed for each of the areas listed in Section V above.
B. If no, please explain:

- C. Attach to this Addendum, a description of the BMPs listed above in Section V or a copy of the Farm Operating Manual (if already developed). The attached copy may be a hard copy or an electronic copy.

VI. OTHER ATTACHMENTS (see instructions for requirements)

- A. The completed and signed Local Government Ordinance Form (LGOF) is attached:
B. A copy of the Department of Conservation and Recreation (DCR) Nutrient Management Plan (NMP) approval letter is attached:

VII. CERTIFICATION STATEMENT

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Printed Name: Kraig Westerbeek

Signature: 

Official Title: Assistant Vice President of Environment, Health, & Safety

Date: 5/14/2014

ADDITIONAL INFORMATION AND INSTRUCTIONS VPDES CAFO PERMIT APPLICATION ADDENDUM

GENERAL INFORMATION

This permit application addendum must be completed and submitted when an owner of a concentrated animal feeding operation makes application to the Department of Environmental Quality for a Virginia Pollutant Discharge Elimination (VPDES) Permit. Contact the nearest DEQ regional office if you have questions about completing this form. Please type or print all information. All parts of this form must be completed.

DEFINITION OF TERMS

Best Management Practice (BMP): means schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the discharge of pollutants to surface waters. BMPs also include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

Process Wastewater: Process wastewater from an AFO means water directly or indirectly used in the operation of the AFO for any of the following: spillage or overflow from animal or poultry watering systems; washing, cleaning, or flushing pens, barns, manure pits, or other AFO facilities; direct contact swimming, washing, or spray cooling of the (confined) animals; or dust control. Process wastewater from an AFO also includes any water that comes into contact with any raw materials, products, or byproducts including manure, litter, feed, milk, eggs or bedding.

Production Area: means that part of an AFO that includes the animal confinement area, the manure storage area, the raw materials storage area, and the waste containment areas. The animal confinement area includes but is not limited to open lots, housed lots, feedlots, confinement houses, stall barns, free stall barns, milkrooms, milking centers, cowyards, barnyards, medication pens, walkers, animal walkways, and stables. The manure storage area includes but is not limited to lagoons, runoff ponds, storage sheds, stockpiles, under house or pit storages, liquid impoundments, static piles, and composting piles. The raw materials storage areas include but is not limited to feed silos, silage bunkers, and bedding materials. The waste containment area includes but is not limited to settling basins, and areas within berms and diversions that separate uncontaminated storm water. Also included in the definition of production area is any egg washing or egg processing facility, and any area used in the storage, handling, treatment, or disposal of mortalities.

Storm Water: means storm water run-off, snow melt run-off, and surface run-off and drainage.

APPLICATION ADDENDUM INSTRUCTIONS

I. CONTACT INFORMATION

Give the name, mailing address, telephone numbers and e-mail address (if available) of the person to whom this permit will be issued. Please provide the best day of the week and time for DEQ to make contact with the owner during regular working hours.

II. FARM/FACILITY INFORMATION

Give the name of the farm or facility. Give the physical location for the animal feeding operation other than the owner's mailing address (e.g. Rt. 653, 1 mile west of Rt. 702). List the number of any expiring or currently effective permits issued to the concentrated animal feeding operation under the VPA or VPDES permit program.

III. FARM OPERATING MANUAL

Indicate if a Farm Operating Manual has been developed for this facility. If yes, provide the date of the last review/revision of the Farm Operating Manual. If the Manual has already been developed then indicate whether a copy of the Manual is attached to this Addendum. *The attached copy may be a hard copy or an electronic copy.*

Permit requirements for development of a manual:

The Permittee shall develop and submit a Farm Operating Manual for approval by the Department within 90 days of the effective date of this permit. The Farm Operating Manual shall include at a minimum the following information:

- a. identification of land features or structures where storm water will likely leave the production area(s) and enter surface waters of the state;
- b. identification of land features or structures in the land application area(s) which will increase the risk of nitrogen and phosphorus transport to surface waters of the state; land features or structures include tile lines, pipes or ditches;
- c. practices and procedures which will be followed to ensure that the waste storage facilities are designed and operated in accordance with the permit;
- d. practices, procedures and applicable best management practices (BMPs) which will be utilized to ensure compliance with the requirements of this permit including but not limited to the following:
 - (1) if applicable, identification of the location of BMP(s) that are installed or will be installed at the CAFO facility, for BMP(s) that will be installed include the expected timeframe for installation;
 - (2) specification of appropriate maintenance that will be performed for each BMP(s);
 - (3) specification of the steps that will be taken in the event that a BMP(s) is found deficient,
 - (a) as a result of the visual inspections as required by the permit, or
 - (b) as a result of other routine inspections, as prescribed by the Farm Operating Manual, of BMP(s) utilized or installed in accordance with the permit.
- e. The steps shall include any actions that will be taken to correct deficiencies in accordance with the permit.
- e. practices and procedures which will be followed to ensure that all equipment needed for the proper operation of the permitted facilities is maintained in good working order, including but not limited to the following:
 - (1) retention of the equipment manufacturer's operation and maintenance manuals or other reference source to allow for timely maintenance and prompt repair of equipment when appropriate; and
 - (2) specification of the frequencies of inspections in order to detect leaks on equipment used for liquid manure handling and land application; and
- f. an emergency plan which includes appropriate procedures for employees to follow in case of an emergency such as; an unauthorized discharge of manure, poultry waste, from the production area or catastrophic animal mortality. The emergency plan must include appropriate information for assistance with the particular emergency and must include contact information for local, state and federal agencies required to be notified in the case of any of the above mentioned events.

The Permittee shall operate the CAFO facility in accordance with the approved Farm Operating Manual which becomes an enforceable part of the permit. Any changes in those practices and procedures shall be documented and submitted to the Department for staff approval within 90 days of the effective date of the changes. The existing manual shall continue to be implemented until the revised manual is approved by the Department. Upon approval of submitted manual changes, the revised manual becomes an enforceable part of the permit. Noncompliance with the approved manual shall be deemed a violation of the permit.

IV. GROUNDWATER MONITORING PLAN

If the facility has an existing permit, indicate whether groundwater monitoring is required. If groundwater monitoring is required, indicate if a groundwater monitoring plan has been developed for this facility. If yes, provide the date of the last review/revision of the plan. If a plan has not been developed, please explain why the plan has not been developed. If the plan has already been developed then indicate whether a copy of the plan is attached to this Addendum. *The attached copy may be a hard copy or an electronic copy.*

Permit requirements for development of a plan:

The Permittee shall develop and submit a Groundwater Monitoring Plan for approval by the Department within 90 days of the effective date of this permit. The Groundwater Monitoring Plan shall include at a minimum the following information:

- (1) Procedures to ensure appropriate methods and practices are being used when monitoring groundwater, and
- (2) Procedures to ensure appropriate measures are taken where monitoring results demonstrate potential noncompliance with the permit and the approved monitoring plan.

V. DISCHARGE POINT AND BEST MANAGEMENT PRACTICES (BMPs) RELATED TO A DISCHARGE POINT

For each discharge point, provide the following information in the table below:

- a) a descriptive name of the discharge point;
- b) the latitude and longitude of its location;
- c) the name of the nearest potential receiving water;
- d) all areas contributing manure, litter, process wastewater, or storm water from the facility; and
- e) the treatment received or BMPs utilized, installed or constructed prior to the discharge point.

VI. BEST MANAGEMENT PRACTICES (BMPs)

If the facility has an existing permit, indicate whether groundwater monitoring is required. If groundwater monitoring is required, indicate if a groundwater monitoring plan has been developed for this facility. If yes, provide the date of the last review/revision of the plan. If a plan has not been developed, please explain why the plan has not been developed. If the plan has already been developed then indicate whether a copy of the plan is attached to this Addendum. *The attached copy may be a hard copy or an electronic copy*

VII. OTHER ATTACHMENTS

Local Government Ordinance Form (LGOF)

State Law requires that the owner of any proposed pollutant management activities or those which have not previously been issued a valid VPA or VPDES permit must attach to the permit application, the completed LGOF. The LGOF is the notification from the governing body of the county, city or town where the operation is located that the operation is consistent with all ordinances adopted pursuant to Chapter 22 (§ 15.2-2200 et seq.) of Title 15.2 of the Code of Virginia.

Nutrient Management Plan (NMP) Approval Letter

A copy of the letter from the Virginia Department of Conservation and Recreation (DCR) approving the operation's NMP and certifying that the NMP was developed by a certified nutrient management planner in accordance with §10.1-104.2 of the Code of Virginia must be attached to the permit application. However, if a current NMP approval letter is on file at the DEQ regional office then it is not necessary to attach the NMP approval letter.

VIII. CERTIFICATION STATEMENT

The Certification must bear an original signature in ink, photocopies are not acceptable. State regulations require the permit application to be signed as follows:

1. For a corporation: by a responsible corporate officer. For the purpose of this section, a responsible corporate officer means: (i) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy-making or decision-making functions for the corporation, or (ii) the manager of one or more manufacturing, production, or operating facilities, provided the manager is authorized to make management decisions that govern the operation of the regulated facility, including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long-term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures;
2. For a partnership or sole proprietorship: by a general partner or the proprietor, respectively; or
3. For a municipality, state, federal, or other public agency: by either a principal executive officer or ranking elected official. For purposes of this section, a principal executive officer of a federal agency includes: (i) the chief executive officer of the agency, or (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency.

BMP Description – Secondary Containment

The BMP is a grass covered earthen containment structure that collects runoff from the production area. The structure has a manually operated valve that is maintained as normally closed. The BMP is inspected daily by the farm production staff. Once water collects in the structure it is visually inspected to ensure it does not contain any contaminants and it released. The BMP has an emergency spillway for structural integrity during extreme rainfall events.

VIRGINIA POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT CONCENTRATED ANIMAL FEEDING OPERATION

Permit Application Addendum

Murphy-Brown LLC
Farms 9, 10 and 21
Permit VPA 00574

VIII.B MORTALITY DISPOSAL METHODS

The mortality disposal method utilized for this site is rendering. Mortality is removed from the Barn and placed in a mortality ben for pickup and removal from the site. The mortality ben is a synthetic container with a lid. The dead box is picked up and emptied daily by truck, the contents of the box are delivered to the rendering facility. In the event unforeseen circumstances prevent daily pick up of mortality, the mortality is held inside the barn until daily removal can resume.

XI. CHEMICAL HANDLING METHODS

Murphy-Brown LLC maintains a list of all chemicals used on its facilities. The list of hazardous chemical used by Murphy-Brown is maintained by a third party contractor. The contractor provides emergency information for all products used by the company. This includes Material Safety Data Sheets outlining the manufactures guidelines for handling, storage, and disposal. Information is available 24 hours a day for all worksites within the Murphy-Brown organization. Employees are trained to handle, store, and dispose of chemicals pre the manufactures label. Chemicals are not disposed in any manure, process waste water or storm water.

Douglas W. Domenech
Secretary of Natural Resources



David A. Johnson
Director

COMMONWEALTH of VIRGINIA
DEPARTMENT OF CONSERVATION AND RECREATION

203 Governor Street
Richmond, Virginia 23219-2010
(804) 786-1712

March 27, 2013

Mr. R. O. Britt
Murphy-Brown Farms 8509, 8510, and 8521
P.O. Box 1240
Waverly, VA 23890

Dear Mr. Britt,

Your nutrient management plan (NMP), dated 3/24/2012, for a 34500 head swine operation has been approved by the Virginia Department of Conservation and Recreation for coverage under a Virginia Pollution Abatement (VPA) or Virginia Pollutant Discharge Elimination System (VPDES) permit. Your NMP was written by a nutrient management planner certified by the Virginia Department of Conservation and Recreation.

A copy of this letter must be kept with your nutrient management plan. A copy of this letter and a copy of the approved plan must be sent to the Piedmont Regional Office of the Virginia Department of Environmental Quality (DEQ).

It should be noted that this plan expires 3/24/2015. We recommend the process of revising this nutrient management plan begin at least six months prior to the expiration date.

If you have any questions concerning this letter, please feel free to contact me at bobby.long@dcr.virginia.gov or (434) 547-8172.

Sincerely,

A handwritten signature in cursive ink that reads "Bobby Long".

Bobby Long
Nutrient Management Coordinator – Animal Waste
Division of Stormwater Management

cc: Tim Sexton, DCR Nutrient Management Program Manager
R O Britt
DEQ Piedmont Regional Office

NUTRIENT MANAGEMENT PLAN IDENTIFICATION

Operator

Murphy-Brown LLC
434 East Main Street
Waverly, VA 23890
(804)-834-1229

Integrator:None

Farm Coordinates

Easting: 318600, Northing: 4109000, zone: 17

Watershed Summary

watershed: CU56
county: Surry

Nutrient Management Planner

R.O. Britt
434 East Main Street
Waverly, VA 23890

Certification Code: 571

Acreage Use Summary

Total Acreage in this plan: 250.7

Cropland: 105.
Hayland: 96.4
Pasture: 0.
Specialty: 49.3

Livestock Summary

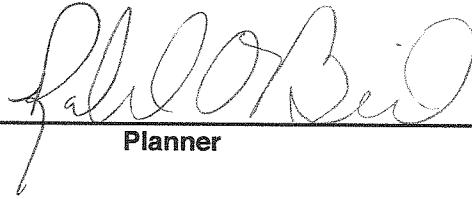
Beef Cattle	0
Dairy Cattle	0
Poultry	0
Swine	34500
Other	0

Manure Production Balance

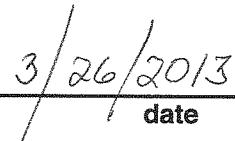
	Imported	Produced	Exported	Used	Net
kgals	0.	65648.5	0.	32831.4	32817.1
tons	0.	0.	0.	0.	0.

Plan written 3/24/2012
Valid until 3/24/2015

Signature:



Planner



3/26/2013

date

8509,8510 and 8521 Narrative

This nutrient management plan is a revision for Murphy-Brown LLC farms 8509, 8510, 8521; covered by permit number VPA00574. These farms are located on Rt 40, in Surry County approximately 8 miles east of Waverly.

This site is comprised of three 10,500 head wean to finish swine facilities operated by Murphy-Brown LLC. The swine waste is stored and treated at the site by a two stage anaerobic lagoon system. Under normal circumstances, effluent from the two stage aerobic lagoon system is land applied with irrigation equipment to bermuda hay, small grain hay and row crops. In order to balance effluent utilization, effluent from any lagoon may be applied to any field. Nutrient content of the effluent is based on an average value of yearly lagoon analysis. There are 250.7 acres of hay and row crop land available for land application.

Commercial fertilizer may be used in conjunction with or to supplement crop nutrient needs if effluent is insufficient to meet agronomic requirements of the crop. Any commercial fertilizer application will not exceed the nutrient recommendations in this plan.

**Nutrient Management Plan Special Conditions for
Virginia Pollution Abatement (VPA) and Virginia Pollutant Discharge
Elimination System (VPDES) Permits**
September 2011

The following management practices will be utilized for swine operations requiring a VPA or VPDES permit:

1. Soil samples for manure application fields will be analyzed at least once every three (3) years for pH, phosphorus, potassium, calcium, and magnesium in order to maximize the efficient utilization of nutrients. A representative soil sample of each field will be comprised of at least twenty (20) cores randomly sampled throughout the field. Soil sampling core depth will be from 0-4 inches for land which has not been tilled within the past three (3) years, or 0-6 inches for land that has been tilled within the past three (3) years. Soil pH will be maintained at appropriate agronomic levels to promote optimum crop growth and nutrient utilization.
2. Soil test analysis will be performed by one of the laboratories listed below. Soil phosphorus levels must be determined using the Mehlich I or Mehlich III procedure.
 - A&L Eastern Laboratories
 - Agri-Analysis Testing Laboratory
 - AgroLab
 - Brookside Laboratories
 - Logan Labs
 - Midwest Laboratories (must request Mehlich III)
 - Spectrum Analytical Laboratories
 - Virginia Tech Soil Testing Lab
- Waters Agricultural Laboratories (GA)
3. Representative manure samples will be analyzed at a minimum of once per year for VPA permits and twice per year for VPDES permits for the following: total nitrogen or total Kjeldahl nitrogen (TKN), ammonium nitrogen, total phosphorus, total potassium, calcium, magnesium, and percent (%) moisture. Separate samples shall be taken from all manure sources to be used for application (i.e. under-house, lagoon, compost, etc.). All manure analyses shall be performed using laboratory methods consistent with *Recommended Methods of Manure Analysis*, publication A3769, University of Wisconsin, 2003 or other methods approved by the Virginia Department of Conservation and Recreation (DCR). Manure analysis results will be used to determine actual manure rates that do not exceed the nitrogen and phosphorus application rates specified in the nutrient management plan using either the most recent manure analysis results (not greater than 1 year old) or the facility's average results based on actual manure analysis.
4. All crops will be planted and harvested in a timely manner using commercially acceptable management practices.
5. Make manure applications at or near planting or to existing actively growing crops to ensure that nutrients are properly utilized. Utilize the spreading schedule contained in the nutrient management plan and the spreading schedule in #26 of this document to determine appropriate manure application times and rates. Additional commercial

fertilizer applications (especially nitrogen) should be made as a split application ~~separate~~ from the manure applications, either as a sidedress or topdress application.

6. For permanent hay or pasture, an adequate stand of hay and/or pasture crop species ~~will~~ be established prior to land application of manure. Commercially acceptable stands ~~of~~ the listed species will be maintained and other weeds and grasses controlled. All hay crops will be harvested in a timely and regular manner, removed from fields, and utilized for a suitable purpose.

7. Manure will be applied to application sites in a uniform manner.

8. Do not spread manure within the following setback areas:

- 100 feet from wells or springs
- 35 feet from surface waters if the entire setback is a permanent perennial vegetated buffer
- OR
- 100 feet from surface waters if there is not a permanent perennial vegetated buffer of at least 35 feet in width
- 50 feet from sinkholes*
- 50 feet from limestone rock outcrops
- 25 feet from other rock outcrops
- 10 feet from agricultural drainage ditches (5 feet if injected)
- 200 feet from occupied dwellings (unless waived in writing by the occupant)

*Waste shall not be applied in areas subject to concentrated flow generated by runoff from storm events such that it would discharge into sinkholes in the area.

9. To avoid manure runoff from application fields*:

- Do not spread manure on soils that are saturated.
- Do not apply liquid manure (above 85% moisture content) or commercial fertilizers to frozen, ice or snow-covered ground.

*If runoff is observed, reduce the application rate immediately to prevent overland flow, which reaches buffer areas or accumulates in low-lying areas.

10. For odor control and to reduce drift, avoid spreading on windy days.

11. Liquid irrigation systems will be operated in a manner to prevent runoff into buffered areas and low-lying areas. Use a liquid application rate at or below the specified maximum hydraulic application rate for each field per application. Traveling guns used for irrigation of effluent should be operated in a full circle pattern whenever possible to allow for maximum infiltration. A small wedge shaped area may be left dry ahead of the gun to reduce soil compaction.

12. Spreader calibration is extremely critical to ensure proper application rates. Calibration

of equipment or verification of actual equipment application rates shall occur at a minimum of once per year.

13. New waste storage facilities shall be designed, constructed and operated in accordance with the USDA-NRCS *Field Office Technical Guide* and other appropriate NRCS design criteria.
14. Earthen waste storage structures must be regularly inspected and repaired if leaks, slope failures, excessive embankment settlement, eroded banks, or burrowing animals are detected. A protective cover of appropriate vegetation will be established and maintained on all disturbed areas (lagoon and storage pit embankments, berms, pipe runs, etc.). Vegetation such as trees, shrubs and other woody species are limited to areas considered to be appropriate such as wind breaks or visual screens, and are not to be present on lagoon and storage pit embankments, berms, or pipe runs.
15. New lagoons will be charged to at least $\frac{1}{2}$ of treatment volume capacity with water prior to placement of hogs into production facilities in order to promote biological treatment activity and to reduce odor. When charging lagoons, carefully manage the rate of the water input to avoid damage to lagoon liners.
16. For operations with anaerobic lagoons, pumping shall be managed to maintain the lagoon level between the maximum and minimum operating level. The lagoon level shall be pumped to near the minimum operating level in preparation for the late fall-winter period. The effluent removed shall be uniformly applied, to the designated fields in the nutrient management plan, at or below the maximum rate specified in the plan. Visible markers or another practical method shall be used in new lagoons to indicate the minimum and maximum operating levels based on the lagoon design specifications.
17. Waste discharge from inlet pipe(s) must not have direct contact with clay liner, in order to avoid erosion of the liner. The discharge line(s) must extend past the minimum operating level such that lagoon influent will discharge over the water surface.
18. Waste handling structures, piping, pumps, etc. should be inspected on a regular basis to prevent breakdowns, leaks and spills.
19. Composting of animal mortalities will be conducted in accordance with the latest guidance developed by Virginia Cooperative Extension.
20. Any facility required in the General Permit to monitor groundwater shall monitor groundwater for the following parameters at a frequency of at least once annually: static water level, ammonia nitrogen, nitrate nitrogen, pH and conductivity.
21. Nutrient management plans that contain fields in which row crops will be grown will be revised at least once every three (3) years. Nutrient management plans that contain only hay or pasture fields will be revised at least once every five (5) years. Any such plan revisions will be submitted to DCR for review and approval.
22. This nutrient management plan must be amended or modified and submitted to DCR for review and approval if animal numbers increase above the level specified in the plan; animal types including intended market weights are changed; additional imported manure, biosolids, or industrial waste that was not identified in the existing plan is

applied to fields under the control of the operator; available land area for the utilization of manure decreases below the level necessary to utilize manure in the plan; and/or manure application fields have Mehlich I soil phosphorus levels at or above 55ppm (110 lbs/acre) where either cropping systems, rotations, or fields are changed.

23. Minor plan amendments involving changes to the cropping system, crop rotations, specific application fields, manure analysis results or minor fluctuations in animal market weights or animal numbers (10% or less cumulative increases since this original plan was developed) may be made to this nutrient management plan without prior approval of DCR by the specific certified nutrient management planner that developed this plan. Any such plan amendments must be made prior to subsequent nutrient application to fields impacted by the change. Certified nutrient management planners shall provide a copy of any such plan amendments to DCR within two (2) weeks of the plan modification.
24. All major plan modifications shall be submitted to DCR for review and approval prior to implementing any changes. Major modifications include, but are not limited to, proposed changes to the plan expiration date; increases in animal numbers of greater than 10%; changes in animal type including intended market weight; additional imported manure, biosolids, or industrial wastes not included in the original plan are to be applied; or available land area for the utilization of manure decreases below the level necessary to utilize manure in the plan due to sale of land, expired lease, etc.
25. These conditions do not override any more restrictive plan requirements if required by other specific legislative, regulatory or incentive programs which apply to a specific operator.
26. Manure spreading schedule:

CLOSURE OF ANIMAL WASTE STORAGE FACILITIES

When the animal waste storage facility is no longer needed, the owner or operator shall close the storage facility in a manner that minimizes the need for further maintenance, and controls, minimizes or eliminates, to the extent necessary to protect human health and the environment, the post closure escape of uncontrolled leachate, surface runoff, or waste decomposition products to ground water, surface water or to the atmosphere. At closure, the owner or operator shall remove all liquid waste and animal waste residue from the waste storage facility. All devices used to convey animal waste into the animal waste storage facility shall be removed. Removed waste materials shall either be utilized according to this nutrient management plan or disposed of as solid waste according to the requirements of the Virginia Solid Waste Management Regulations, 9 VAC 20-80-10 et seq.

Once the animal waste is removed, the owner or operator is required to follow the procedures outlined below to either backfill the facility or convert the facility to a fresh water pond:

- If the facility will be backfilled, clay liners on interior side slopes will be removed using earth moving equipment or destroyed using sub-soiling equipment and any

) synthetic liners on side slopes will be rolled or folded and placed in the bottom of the structure prior to backfilling. Such liner removal or destruction shall, at a minimum, occur in the area from the top of the structure to a depth of within three feet of the structure bottom or groundwater whichever is greatest in elevation at the time of closure. The storage facility shall be backfilled with clean material. The animal waste storage facility site shall have a final earthen cover that is designed and constructed to: minimize infiltration of rainwater; minimize erosion of the final cover or side slope material; prevent ponding and support a suitable vegetative cover. In order to ensure proper drainage, the final cover shall have a minimum slope of 5%. Following installation, the owner or operator shall maintain the integrity and effectiveness of the final cover, including any repair needed due to settlement, subsistence, erosion or other events and preventing run-on and run-off from eroding or otherwise damaging the final cover.

- If the facility will be converted to a fresh water pond, the structure to be converted shall be reconstructed as necessary to meet the standard specification for ponds (practice #378) as contained in the Natural Resources Conservation Service (NRCS) Field Office Technical Guide and shall include a principle spillway and an emergency spillway if an embankment of three feet or more exists.

) The owner or operator shall complete these closure activities within six months after the last date on which animal waste is placed in the waste storage facility unless the nutrient management plan is revised and approved by the Department of Conservation and Recreation (DCR). The owner and operator shall notify the regional office of the Department of Environmental Quality (DEQ) upon completion or grading of the final earthen cover or completion of the converted pond structure.

6. Manure spreading schedule.

SWINE MANURE SPREADING SCHEDULE*

CROP	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Alfalfa												
Bermudagrass												
Corn												
Cotton												
Hay**												
Pasture**												
Peanuts												
Sorghum/Millet												
Small Grain												

*Do not spread liquid manure, dry or semi solid manure on soils that are saturated.

**Do not spread liquid manure/effluent (above 85.5% moisture content) to frozen, ice or snow covered ground.

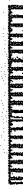
Application of dry or semi solid manure (85.5% moisture content or less) should be avoided on frozen, ice or snow covered ground. If necessary applications may be made to fields that have: (I) slopes not greater than 6.3%, (II) 60% uniform ground cover from crop residue or an existing actively growing crop such as a small grain or tall fescue with an exposed plant height of ≥ 3", (III) a minimum 200-foot vegetated or adequate crop residue buffer between the application area and all surface water courses, and (IV) soils characterized by USDA as "well drained".

** Cool season grasses only, Fescue and/or Orchardgrass

Spread liquid manure and dry or semi solid manure at the rates and times specified in the nutrient management plan



Do not spread liquid manure and dry or semi solid manure during these shaded months.



Manure applications will not be made earlier than 30 days prior to planting on environmentally sensitive sites.

On fields not listed as environmentally sensitive:

- Liquid manure applications will not occur more than 60 days prior to spring planting.



Manure applications are not recommended during this period (late fall-winter). If necessary uniformly apply a maximum of 3,000 gallons per acre per application. If using an irrigation system apply up to a maximum of ½ inch per acre per hour. Do not exceed 40 pounds of plant available nitrogen per acre during this entire period. Allow sufficient drying time between applications. Fields must have greater than 60% uniform live cover with plant height greater than three (3) inches.

Use of hog manure effluent in cropping rotations:

Double-crop sorghum – (planted after Spring harvest of small grain) Effluent applications may begin after the small grain harvest and no more than 30 days prior to planting of the grain sorghum. Effluent applications may continue until $\frac{1}{2}$ of the plants in the field have headed but not later than August 31. Total N applied cannot exceed nutrient needs less the residual N from previous effluent applications, legumes, etc. as defined in Standards and Criteria, revised October 2005.

Soybeans – (double crop and full season) Effluent applications may begin no more than 30 days prior to planting of the soybeans. However, effluent application is not recommended prior to growth stage V6 (six unfolded trifoliate leaves). Nitrogen needs will be established using expected yield for corn based on the soil productivity for the field. Effluent applications may continue until growth stage R6 (full-seed stage) but not later than September 30.

Nutrient Management Plan Balance Sheet
(Spring, 2013-Spring, 2016)
8509,8510 and 8521
Planner: R.O. Britt (cert. No. 571)

Tract: 612 Location: Surry
(N = N based, 1P = P based, 1.5P = P based at 1.5 removal, 0P = No P allowed)

Field CFSA No./Name	Size (ac)	Yr.	Crop	Needs N-P-K (lbs/acre)	Leg Man Resid	Mature/Biosis Rate & Type (Season)	T (d)	Man/Bios N-P-K (lbs/acre)	Net = Needs - applied N-P-K (lbs/acre)	Sum P rem ced	Commercial N-P-K (lbs/acre)	Notes
913/E2(N)	49/49	2013	Corn (grain)	130-40-0	0/0	66.3k Wean t(Sp)	N/A	60-81-658	30-(95)-(1095)	N/A	10-0-0(ba) 20-0-0(ba)	1,2,3,4, 2,5,3
			Wheat (grain)	100-40-0	0/10	44.1k Wean t(Su)	N/A	40-54-437	0-(180)-(2105)	N/A		
		2014	Sorghum (grain)	100-40-0	0/0	41.8k Wean t(Fa)	N/A	38-51-414				
			Rye (cover)	0-0-0	0/0	30.1k Wean t(W)	N/A	24-37-299				
		2015	Com (grain)	130-40-0	0/10	30.1k Wean t(Sp)	N/A	27-37-288				
			Wheat (grain)	100-40-0	0/13	99.4k Wean t(Su)	N/A	90-121-986	10-(260)-(3090)	N/A	10-0-0(ba)	6,1,2,4,3,
		2016		.......	.......	60.6k Wean t(Sp)	N/A	55-74-601	0-(260)-(3090)	N/A	10-0-0(ba) 20-0-0(sd)	1,2,4,3,
						38.9k Wean t(Su)	N/A	35-48-386	30-(340)-(4075)	N/A		
						41.7k Wean t(Fa)	N/A	38-51-414	0-(420)-(5045)	N/A		
						28.1k Wean t(W)	N/A	23-34-279				
						28.k Wean t(Sp)	N/A	25-34-278				
		31/31	Sorghum (grain)	90-30-0	0/0	44.2k Wean t(Sp)	N/A	40-54-438	30-(50)-(655)	N/A	10-0-0(ba) 20-0-0(ba)	1,2,4,3,
			Rye (cover)	0-0-0	0/0	22.k Wean t(Su)	N/A	20-27-218				
		2014	Com (grain)	100-30-0	0/3	47.6k Wean t(Sp)	N/A	43-58-472	0-(50)-(655)	N/A	10-0-0(ba)	1,2,4,
			Wheat (grain)	100-30-0	0/10	47.6k Wean t(Su)	N/A	43-58-472	10-(135)-(1600)	N/A		
		2015		.......	.......	41.7k Wean t(Fa)	N/A	38-51-414	0-(230)-(2610)	N/A		2,3,5
						30.1k Wean t(W)	N/A	24-37-299				
						30.1k Wean t(Sp)	N/A	27-37-299	30-(280)-(3265)	N/A	10-0-0(ba)	6,1,7,4,3,
						66.2k Wean t(Su)	N/A	60-81-657	0-(280)-(3265)	N/A	20-0-0(sd)	
			Rye (cover)	0-0-0	0/0							

Tract: 612

Field CFSN No./Name	Location: Surry	Size (ac)	Yr. Crop	Needs N-P-K (lbs/ac)	Leg Man Resid	Manure/Bios Rate & Type (season)	IT (d)	Man/Bios N-P-K (lbs/ac)	Net = Needs - applied N-P-K (lbs/ac)	Sum P rem cred	Commercial N-P-K (lbs/ac)	Notes
913(C(N)		10/10	2013	Sorghum (grain)	90-80-0	0/0	44.2k Wean t(Sp) 22.4k Wean t(Su)	N/A N/A	40-54-438 20-27-218	30-0-(655)	N/A 20-0-0(sd)	,
			2014	Rye (cover) Corn (grain)	0-0-0 100-80-0	0/0 0/3	47.6k Wean t(Sp) 47.6k Wean t(Su)	N/A N/A	43-58-472 43-58-472	0-0-(655) 10-(35)-(1600)	N/A N/A	
				Wheat (grain)	100-80-0	0/10	41.7k Wean t(Fa)	N/A	38-51-414	0-(80)-(2610)	N/A	2,3,5
			2015	Sorghum (grain)	--- 90-80-0	0/0 0/0	30.1k Wean t(WI) 66.2k Wean t(Su)	N/A N/A	24-37-299 60-81-657	30-(80)-(3265)	N/A 10-0-0(sd)	6 1,2,4,3,
				Rye (cover)	0-0-0	0/0			0-(80)-(3265)	N/A		,

Commercial Application Methods:**br - Broadcast ba - Banded sd - Sidedress****Notes:**

- 1 Band nitrogen with planter
- 2 Commercial fertilizer application may be used in addition to or in place of organic fertilizer applications to supplement crop needs and meet yield goals.
- 3 The maximum waste water application rate per event for this field is 0.9 in./ac. or 24,430 gals./ac. Sufficient drying time will be allowed between subsequent irrigation events so that field capacity is not exceeded due to irrigation events.
- 4 Apply side dress nitrogen when crop is 12 to 24 inches tall. A pre-side dress tissue sample is recommended prior to nutrient application.
- 5 Topdress during Fall
- 6 Topdress during early Spring
- 7 Topdress after first cutting

Tract: 665 Location: Surry
 (N = N based, 1P = P based, 1.5P = P based at 1.5 removal, 0P = No P allowed)

Field CFSAN No. Name	Size (ac) Total/ Used	Yr.	Crop	Needs N-P-K (lbs/ac)	Leg /Man Resid	Manure/Biosid Rate & Type (season)	IT (a)	Man/Bios N-P-K (lbs/ac)	Net = Needs - appd N-P-K (lbs/ac)	Sum P rem ained	Commercial N-P-K (lbs/ac)	Notes
913/C1(1.5P)	18/18	2013	Bermudagrass hay mt.	270-0-0	0/0	55.k Wean t(Sp)	N/A	50-67-546	170-(135)-(1110)	59		1,2
		2014	Barley (silage) Bermudagrass hay mt.	70-0-0	0/0	57.k Wean t(Su)	N/A	52-70-565	70-(135)-(1110)	68		
		2015	Barley (silage) Bermudagrass hay mt.	70-0-0	0/0	55.k Wean t(Sp)	N/A	50-67-546	165-(270)-(2220)	128		1,2
			Barley (silage)	270-0-0	0/7	57.k Wean t(Su)	N/A	52-70-565	70-(270)-(2220)	137		
913/C2(N)	13/13	2013	Corn (grain)	150-40-0	0/0	77.4k Wean t(Sp)	N/A	70-94-767	10-(150)-(1535)	N/A	10-0-(ba)	3,4,2,1,
		2014	Wheat (grain)	100-30-0	0/11	77.3k Wean t(Su)	N/A	70-94-767	0-(245)-(2540)	N/A	20-0-(sq)	2,5
		2015	Sorghum (grain)	... ....	... ...	32.7k Wean t(Fa)	N/A	30-40-324				
		2016	Rye (cover)	0-0-0	0/0	32.7k Wean t(WI)	N/A	27-40-324				
			Corn (grain)	150-40-0	0/0	35.9k Wean t(Sp)	N/A	32-44-356	10-(350)-(3635)	N/A	10-0-(ba)	6
			Wheat (grain)	100-30-0	0/14	110.4k Wean t(Su)	N/A	100-135-1095	0-(350)-(3635)	N/A	10-0-(ba)	3,2,7,1,
						71.k Wean t(Sp)	N/A	64-87-705	30-(455)-(4825)	N/A	20-0-(sq)	3,2,1,4,
						48.9k Wean t(Su)	N/A	44-60-485	0-(545)-(5785)	N/A		2,8
						31.2k Wean t(Fa)	N/A	28-38-310				
						31.2k Wean t(WI)	N/A	25-38-310				
						34.3k Wean t(Sp)	N/A	31-42-340				6

Field CFSANo./Name	Location:	Surry	Crop Yr.	Needs N-P-K (lbs/acre)	Leg Man Resid	Manure/Biosolids Rate & Type (Season)	IT (c)	Man/Bios N-P-K (lbs/acre)	Net = Needs - applied N-P-K (lbs/acre)	Sum P rem dried	Commercial N-P-K (lbs/acre)	Notes
913/D(1.5P)	16/16	2013	Bermudagrass hay mt.	270-0-0	0/0	55.k Wean t(Sp)	N/A	50-67-546	170-(135)-(1110)	59		
		2014	Barley (silage) Bermudagrass hay mt.	70-0-0 270-0-0	0/0 0/5	57.k Wean t(Su) 55.k Wean t(Sp)	N/A	52-70-565 50-67-546	70-(135)-(1110) 165-(270)-(2220)	68 128		
		2015	Barley (silage) Bermudagrass hay mt.	70-0-0 270-0-0	0/0 0/7	57.k Wean t(Su) 55.k Wean t(Sp)	N/A	52-70-565 50-67-546	70-(270)-(2220) 160-(405)-(3330)	137 196		
			Barley (silage)	70-0-0	0/0	57.k Wean t(Su)	N/A	52-70-565	70-(405)-(3330)	205		
913/E1(1.5P)	32/32	2013	Bermudagrass hay mt.	235-0-0	0/0	55.k Wean t(Sp)	N/A	50-67-546	135-(135)-(1110)	59		
		2014	Barley (silage) Bermudagrass hay mt.	70-0-0 235-0-0	0/0 0/5	57.k Wean t(Su) 55.k Wean t(Sp)	N/A	52-70-565 50-67-546	70-(135)-(1110) 130-(270)-(2220)	68 128		
		2015	Barley (silage) Bermudagrass hay mt.	70-0-0 235-0-0	0/0 0/7	57.k Wean t(Su) 55.k Wean t(Sp)	N/A	52-70-565 50-67-546	70-(270)-(2220) 125-(405)-(3330)	137 196		
			Barley (silage)	70-0-0	0/0	57.k Wean t(Su)	N/A	52-70-565	70-(405)-(3330)	205		

Commercial Application Methods:
br - Broadcast **ba - Banded** **sd - Sidedress**

Notes:

- 1 The maximum waste water application rate per event for this field is 0.9 in./ac. or 24,430 gals./ac. Sufficient drying time will be allowed between subsequent irrigation events so that field capacity is not exceeded due to irrigation events.
- 2 Commercial fertilizer application may be used in addition to or in place of organic fertilizer applications to supplement crop needs and meet yield goals.
- 3 Band nitrogen with planter
- 4 Apply side dress nitrogen when crop is 12 to 24 inches tall. A pre-side dress tissue sample is recommended prior to nutrient application.
- 5 Topdress during Fall
- 6 Topdress during early Spring
- 7 Small grain nutrient applications should be split so that approximately half the nutrients are applied in the Fall/early Winter and the remaining half in the early Spring.
- 8 The maximum waste water application rate per event for this field is 0.9 in./ac. or 19,009 gals./ac. Sufficient drying time will be allowed between subsequent irrigation events so that field capacity is not exceeded due to irrigation events.

Tract: 667

(N = N based, 1P = P based, 1.5P = P based at 1.5 removal, 0P = No P allowed)

Field CFSA No./Name	Size (ac) Total/ Used	Yr.	Crop	Needs N-P-K (lbs/ac)	Leg Nian Resid	Manure/Biosol Rate & Type (Season)	TT (d)	Man/Bios N-P-K (lbs/ac)	Net = Needs - applied N-P-K (lbs/ac)	Sum P rem oved	Commercial N-P-K (lbs/ac)	Notes
913/A1(N)	16/16	2013	Sorghum (grain)	90-30-0	0/0	44.2k Wean t(Sp)	N/A	40-54-438	30-(50)-(655)	N/A	10-0-0(ba) 20-0-0(sd)	1,2,3,4,
		2014	Rye (cover) Corn (grain)	0-0-0 120-30-0	0/0 0/3	22.k Wean t(Su)	N/A	20-27-218	0-(50)-(655)	N/A	10-0-0(ba)	1,2,3,4,
			Wheat (grain)	100-30-0	0/11	58.6k Wean t(Sp)	N/A	53-71-581	10-(165)-(1822)	N/A	10-0-0(ba)	1,2,3,4,
		2015	Sorghum (grain)	90-30-0	0/0	32.7k Wean t(Fa)	N/A	30-40-324	0-(260)-(2825)	N/A	27-40-324	2,4,5,6
		2016	Rye (cover) Corn (grain)	0-0-0 120-30-0	0/0 0/9	35.9k Wean t(Sp)	N/A	32-44-356	30-(81)-657	N/A	60-81-657	30-(310)-(3480)
		13/13	Sorghum (grain)	100-20-0	0/0	66.2k Wean t(Su)	N/A	0-(310)-(3480)	N/A	10-0-0(ba) 20-0-0(sd)	10-0-0(ba)	1,2,3,4,
			Rye (cover) Corn (grain)	0-0-0 120-20-0	0/0 0/3	110.1k Wean t(Sp)	N/A	100-134-1092	10-(415)-(4570)	N/A	10-0-0(ba)	1,2,7,4,
913/A2(N)		2013	Sorghum (grain)	100-20-0	0/0	49.7k Wean t(Sp)	N/A	45-61-493	30-(75)-(765)	N/A	10-0-0(ba) 20-0-0(sd)	
		2014	Rye (cover) Corn (grain)	0-0-0 120-20-0	0/0 0/3	27.6k Wean t(Su)	N/A	25-34-274	0-(75)-(765)	N/A	10-0-0(ba)	1,8,3,4,
			Wheat (grain)	100-20-0	0/11	58.3k Wean t(Sp)	N/A	53-71-579	10-(195)-(1922)	N/A	53-71-579	2,5,6,4
		2015	Sorghum (grain)	100-20-0	0/0	32.6k Wean t(Fa)	N/A	30-40-323	0-(300)-(2925)	N/A	32.6k Wean t(Wi)	
			Rye (cover)	0-0-0	0/0	35.9k Wean t(Sp)	N/A	33-44-356	30-(375)-(3690)	N/A	70-94-767	
						77.3k Wean t(Su)	N/A	0-(375)-(3690)	N/A	10-0-0(ba) 20-0-0(sd)	N/A	

Tract: 667

Location: Surry

Field CFSN No./Name	Size (ac)	Yr.	Crop	Needs N-P-K (lbs/ac)	Leg. Man Resid	Manure/Biosol Rate & Type (season)	T (t)	Man/Bios N-P-K (lbs/ac)	Net = Needs - applied N-P-K (lbs/ac)	Sum P rem ced	Commercial N-P-K (lbs/ac)	Notes	
913/A3(N)	16/16	2013	Bermudagrass hay mt.	235-40-0	0/0	141.k Wean t(Sp)	N/A	128-172-1399	0-(275)-(2575)	N/A		4	
			Barley (silage)	70-20-0	0/0	118.7k Wean t(Su)	N/A	107-145-1177					
		2014	Bermudagrass hay mt.	235-40-0	0/17	38.5k Wean t(Fa) 43.3k Wean t(Wi) 120.3k Wean t(Sp)	N/A N/A N/A	35-47-382 35-53-429 109-147-1193	0-(355)-(3385) 0-(610)-(5770)	N/A		7,4 7,4 4	
			Barley (silage)	70-20-0	0/0	120.3k Wean t(Su)	N/A	109-147-1193					
		2015	Bermudagrass hay mt.	235-40-0	0/24	38.5k Wean t(Fa) 43.3k Wean t(Wi) 116.7k Wean t(Sp)	N/A N/A N/A	35-47-382 35-53-429 106-142-1158	0-(690)-(6580) 0-(935)-(8895)	N/A		7,4 7,1 4,1	
			Barley (silage)	70-20-0	0/0	116.6k Wean t(Su)	N/A	106-142-1157					
						38.5k Wean t(Fa) 43.3k Wean t(Wi)	N/A	35-47-382 35-53-429	0-(1015)-(9705)	N/A		7,4	
		913/B1(N)	18/18	2013	Corn (grain)	130-0-0	0/0	66.3k Wean t(Sp)	N/A	60-81-668	30-(135)-(1095)	N/A	1,8,7,4, 2,5,6,4
					Wheat (grain)	100-0-0	0/9	44.1k Wean t(Su)	N/A	40-54-437		N/A	
						---	---	33.1k Wean t(Fa)	N/A	30-40-327	0-(260)-(2110)	N/A	
		2014	Sorghum (grain)	100-0-0	0/0	33.1k Wean t(Wi)	N/A	27-40-327					
						---	---	36.4k Wean t(Sp)	N/A	33-44-361			
							0/0	77.3k Wean t(Su)	N/A	70-94-767	30-(355)-(2875)	N/A	
		2015	Rye (cover)	0-0-0	0/0	60.5k Wean t(Sp)	N/A	55-74-600	0-(355)-(2875)	N/A	10-0-0(ba)	,	
			Com (grain)	130-0-0	0/9	60.5k Wean t(Su)	N/A	55-74-600	10-(505)-(4075)	N/A	20-0-0(sd)		
				100-0-0	0/13	31.7k Wean t(Fa)	N/A	29-39-314	0-(625)-(5050)	N/A	10-0-0(ba)	1,8,3,4,	
		2016	Wheat (grain)	---	---	31.7k Wean t(Wi)	N/A	26-39-314				2,5,1,4	
						34.8k Wean t(Sp)	N/A	31-42-345					

Field CFSANo./Name	Location:	Surry	Crop	Needs N-P-K (lbs/acre)	Leg Man Resid	Manure/Biosid Rate & Type (season)	IT (d)	Man/Bios N-P-K (lbs/acre)	Net = Needs - applied N-P-K (lbs/acre)	Sum P rem cred	Commercial N-P-K (lbs/acre)	Notes
913/B2(N)	21/21	2013	Bermudagrass hay mt.	235-40-0	0/0	129.8k Wean t(Sp)	N/A	111-158-1288	0-(275)-(2575)	N/A	4	
		2014	Barley (silage) Bermudagrass hay mt.	70-20-0 235-40-0	0/0 0/12	129.8k Wean t(Su) 123.4k Wean t(Sp)	N/A N/A	1117-158-1288 112-151-1224	0-(255)-(2575) 0-(515)-(5025)	N/A N/A	4	
		2015	Barley (silage) Bermudagrass hay mt.	70-20-0 235-40-0	0/0 0/16	123.5k Wean t(Su) 121.1k Wean t(Sp) 121.2k Wean t(Su)	N/A N/A N/A	112-151-1225 110-148-1200 110-148-1202	70-(495)-(5025) 0-(750)-(7430)	N/A N/A	4	
			Barley (silage)	70-20-0	0/0				70-(730)-(7430)	N/A		

Commercial Application Methods:

br - Broadcast **ba** - Banded **sd** - Sidedress

Notes:

- 1 Band nitrogen with planter
- 2 Commercial fertilizer application may be used in addition to or in place of organic fertilizer applications to supplement crop needs and meet yield goals.
- 3 Apply side dress nitrogen when crop is 12 to 24 inches tall. A pre-side dress tissue sample is recommended prior to nutrient application.
- 4 The maximum waste water application rate per event for this field is 0.9 in./ac. or 24,430 gals./ac. Sufficient drying time will be allowed between subsequent irrigation events so that field capacity is not exceeded due to irrigation events.
- 5 Topdress during Fall
- 6 Topdress during early Spring
- 7 Small grain nutrient applications should be split so that approximately half the nutrients are applied in the Fall/early Winter and the remaining half in the early Spring.
- 8 Topdress after first cutting

Soil Test Summary

Tract	Field	Acre	Date	P2O5	K2O	Lab	Soil pH	Lime Date	rec. lime tons/Ac
612	E2	49	2012-Fa	M+ (33 P lbs/acre)	VH (315 K lbs/acre)	Virginia Tech	6.1		
612	F	31	2012-Fa	H (57 P lbs/acre)	VH (457 K lbs/acre)	Virginia Tech	7.1		
612	G	10	2012-Fa	L+ (112 P lbs/acre)	VH (609 K lbs/acre)	Virginia Tech	7.2		
665	C1	18	2012-Fa	VH (129 P lbs/acre)	VH (384 K lbs/acre)	Virginia Tech	6.9		
665	C2	13	2012-Fa	H (57 P lbs/acre)	VH (430 K lbs/acre)	Virginia Tech	7.3		
665	D	16	2012-Fa	VH (247 P lbs/acre)	VH (688 K lbs/acre)	Virginia Tech	7.7		
665	E1	32	2012-Fa	VH (232 P lbs/acre)	VH (649 K lbs/acre)	Virginia Tech	7.9		
667	A1	16	2012-Fa	H (80 P lbs/acre)	VH (512 K lbs/acre)	Virginia Tech	6.8		
667	A2	13	2012-Fa	H+ (96 P lbs/acre)	VH (459 K lbs/acre)	Virginia Tech	6.9		
667	A3	16	2012-Fa	H+ (96 P lbs/acre)	VH (459 K lbs/acre)	Virginia Tech	6.9		
667	B1	18	2012-Fa	VH (153 P lbs/acre)	VH (597 K lbs/acre)	Virginia Tech	7.2		
667	B2	21	2012-Fa	H+ (102 P lbs/acre)	VH (645 K lbs/acre)	Virginia Tech	7.6		

Manure Production Summary

Manure Name: Wean to Finish

Animal Summary
Feeder Swine: 31500

Manure Storage Capacity: 16958. kgals

Manure Analysis:

TKN: 1.81
P2O5: 1.22
NH4: 1.44
K2O: 9.92

Plant Available Nutrients:

Immediate Incorporation:

1.48 lbs N
1.22 lbs P2O5
9.92 lbs K2O

Surface Applied:

.83 lbs N
1.22 lbs P2O5
9.92 lbs K2O

Residual N:

yr 1: .04 lbs
yr 2: .02 lbs
yr 3: .01 lbs

Manure Production

Dec-Feb	9141
Mar-May	9141
Jun-Aug	9141
Sep-Nov	9141

Total Produced: 36565
Manure Sold/yr: 0
Manure purch./yr: 0

Liquid Manure Production Details

production [kgal/yr] = (# confined)[animals] * (avg wt)[animal-lbs/animal] * (prod factor)[gal/yr/animal-lb] * (0.001)[kgal/gal] + (# confined)[animals] * (waste-water)[gal/day/animal] * (365)[day/yr] * (0.001)[kgal/gal]

Group Name	animal type	%(#) confined	avg wi	prod factor	waste water	production
Wean to Finish	Feeder Swine	100(31500)	125.0	2.74	2.0	33323.9

Net Precipitation Excess

NPE [kgal/yr] = {precip (44.[in/yr]) - evap (40.[in/yr])} * pit/loocon factor (0.9) * surface area (650000.[sq-ft]) * (1/12)[ft/in] * (7.48)[gal/cu-ft] * (0.001)[kgal/gal] = 3241.33[kgal/yr]

Field Productivities for Major Crops

Tract Name	Tract/Field	Field Name	Acres	Predominant Soil Series	Corn	Small Grain	Alfalfa	Grass Hay	Environmental Warnings
612	913/913	E2	49	Slagle Craven	IIIb IVb	II III	III Not Suited	II IV	
	913/913	F	31				Not Suited	IV	
913/913	G		10	Craven	IVb	III	Not Suited	IV	
665	913/913	C1	18	Slagle	IIIa	I	III	II	
	913/913	C2	13	Slagle	IIb	-	III	-	
	913/913	D	16	Slagle	IIIb	-	III	-	
	913/913	E1	32	Emporia	IVa	II	III	III	
667	913/913	A1	16	Craven	IVa	III	Not Suited	IV	
	913/913	A2	13	Nevarc	IVa	II	Not Suited	II	
	913/913	A3*	16	Nevarc	IVb	III	Not Suited	IV	High Leaching, Poor Drain
	913/913	B1*	18	Slagle	IIIb	II	III	II	High Leaching
	913/913	B2	21	Emporia	IVb	IV	Not Suited	IV	

* Do not apply manure or biosolids more than 30 days prior to planting. Apply commercial fertilizer nitrogen to row crops in split spring applications.

Yield Range

Field Productivity Group	Corn Grain Bu/Acre	Barley/Intensive Wheat Bu/Acre	Std. Wheat Bu/Acre	Alfalfa Tons/Acre	Grass/Hay Tons/Acre
I	>170	>80	>64	>6	>4.0
II	150-170	70-80	56-64	4-6	3.5-4.0
III	130-150	60-70	48-56	<4	3.0-3.5
IV	100-130	50-60	40-48	NA	<3.0
V	<100	<50	<40	NA	NA

Farm Summary Report

Plan: Revision Spring, 2013 - Spring, 2016

Farm Name: 8509,8510 and 8521

Location: Surry

Specialist: R.O. Britt

N-based Acres: 184.5

P-based Acres: 66.2

Tract Name: 612

FSA Number: 913

Location: Surry

Tract Narrative:

Field Name: E2

Total Acres: 49.00

Usable Acres: 49.00

FSA Number: 913

Tract: 612

Location: Surry

Slope Class: B

Hydrologic Group: C

Riparian buffer width: 1553 ft

Distance to stream: 1553 ft

Conservation Practices:

Contour planting

Conservation tillage (>30% residue)

P-Index Summary

N-based

Phosphorus Limit method: VA P-Index Calculation
P-Index value = 25.08

Field Narrative:

%slope: 0.0 Slope Len: 0.0 R factor: 0.0 K factor: 0.0
T factor: 0.0 P factor: 1.0 Cmax: 0.000 Erosion: 1.18 tons/acre

Soil Test Results:

DATE	PH	P	K
Fa-2009	7.2	VH(188.75 P lbs/acre)	VH(750.5 K lbs/acre)
Fa-2011	7.6	VH(226 P lbs/acre)	VH(1098 K lbs/acre)
Fa-2012	6.1	M+(33 P lbs/acre)	VH(315 K lbs/acre)

Soils:

PERCENT	SYMBOL	SOIL SERIES
30	28C	Nevarc Remlik
50	33A	Slagle
10	10A	Craven
10	33B	Slagle

Field Warnings:

Crop Rotation:

PLANTED	YIELD	CROP NAME
2013-Sp	130.0 bushel(s)	Corn (grain) - No Till
2013-Fa	58.6 * bushel(s)	Wheat (grain) - No Till
2014-Su	102.0 bushel(s)	Sorghum (grain) - No Till
2014-Fa	0.0	Rye (cover) - No Till
2015-Sp	130.0 bushel(s)	Corn (grain) - No Till
2015-Fa	58.6 * bushel(s)	Wheat (grain) - No Till

Field Name:

Total Acres: 30.70 Usable Acres: 30.70

FSA Number: 913

Tract: 612

Location: Surry

Slope Class: A

Hydrologic Group: C

Riparian buffer width: 2843 ft
Distance to stream: 2843 ft

Conservation Practices:

Contour planting

Conservation tillage (>30% residue)

P-Index Summary

N-based

Phosphorus Limit method: VA P-Index Calculation

P-index value = 21.7

%slope: 0.0
T factor: 0.0

Slope Len: 0.
P factor: 1.0

R factor: 0.0
Cmax: 0.000

K factor: 0.0
Erosion: 0.74 tons/acre

Soil Test Results:

DATE	PH	P	K
Fa-2009	6.5	M(20.5 P lbs/acre)	VH(403.5 K lbs/acre)
Fa-2011	6.9	M(21 P lbs/acre)	VH(440.5 K lbs/acre)
Fa-2012	7.1	H(57 P lbs/acre)	VH(457 K lbs/acre)

Soils:

	PERCENT	SYMBOL	SOIL SERIES
85	10A	Craven	
5	11B3	Craven	
10	26B	Nansemond	

Field Warnings:

CROP ROTATION:	PLANTED	YIELD	CROP NAME
2013-Sp		91.9 bushel(s)	Sorghum (grain) - No Till
2013-Fa		0.0	Rye (cover) - No Till
2014-Sp		104.8 bushel(s)	Corn (grain) - No Till
2014-Fa		49.0 * bushel(s)	Wheat (grain) - No Till
2015-Su		91.9 bushel(s)	Sorghum (grain) - No Till
2015-Fa		0.0	Rye (cover) - No Till

Field Name: G
Total Acres: 9.60 Usable Acres: 9.60

FSA Number: 913
Tract: 612
Location:
Slope Class: A Surry Hydrologic Group: C

Riparian buffer width: 2750 ft
Distance to stream: 2750 ft

Conservation Practices:

Contour planting

Conservation tillage (>30% residue)

P-Index Summary

N-based

Phosphorus Limit method: VA P-Index Calculation

P-Index Value = 21.25

%slope: 0.0 Slope Len: 0. R factor: 0.0 K factor: 0.0
T factor: 0.0 P factor: 1.0 Crmax: 0.000 Erosion: 0.94 tons/acre

Soil Test Results:

DATE	PH	P	K
Fa-2009	6.2	M(24 P lbs/acre)	VH(366 K lbs/acre)
Fa-2011	6.3	L+(12 P lbs/acre)	H-(186 K lbs/acre)
Fa-2012	7.2	L+(12 P lbs/acre)	VH(609 K lbs/acre)

Soils:

PERCENT	SYMBOL	SOIL SERIES
20	26B	Nansemond
20	11B3	Craven
60	10A	Craven

Field Warnings:

CROP ROTATION:	YIELD	CROP NAME
PLANTED		

Lab
Virginia Tech
Virginia Tech
Virginia Tech

2013-Sp	91.5 bushel(s)	Sorghum (grain) - No Till
2013-Fa	0.0 Rye (cover) - No Till	
2014-Sp	107.0 bushel(s)	Corn (grain) - No Till
2014-Fa	48.8 bushel(s)	Wheat (Grain) - No Till
2015-Su	91.5 bushel(s)	Sorghum (grain) - No Till
2015-Fa	0.0 Rye (cover) - No Till	

Tract Name: 665
FSA Number: 913
Location: Surry

Field Name:	C1
Total Acres:	18.30 Usable Acres: 18.30
FSA Number:	913
Tract:	665
Location:	Surry
Slope Class:	B Hydrologic Group: C

Riparian buffer width: 250 ft
Distance to stream: 250 ft

Conservation Practices:

Contour planting
Conservation tillage (>30% residue)

P-Index Summary

P-based(1.5)
Phosphorus Limit method: VA P-Index Calculation
P-Index value = 32.05

%slope: 0.0 Slope Len: 0. R factor: 0.0 K factor: 0.0
T factor: 0.0 P factor: 1.0 Cmax: 0.000 Erosion: 4.46 tons/acre

Soil Test Results:
DATE PH P K Lab
Fa-2009 7.9 VH(304 P lbs/acre) VH(924 K lbs/acre)
Fa-2011 7.3 H+(96 P lbs/acre) VH(533 K lbs/acre)

Virginia Tech
Virginia Tech

Fa-2012 6.9 VH(129 P lbs/acre) VH(384 K lbs/acre) Virginia Tech

Soils:	PERCENT	SYMBOL	SOIL SERIES
80	33B	Stagle	
10	31A	Rains	
10	26B	Nansemond	

Field Warnings:

Crop Rotation:

PLANTED	YIELD	CROP NAME
2013-Sp	5.7 tons	Bermudagrass (hay), maint. - No Till
2013-Fa	1.8 * ton	Barley (silage) - No Till
2014-Sp	5.7 tons	Bermudagrass (hay), maint. - No Till
2014-Fa	1.8 * ton	Barley (silage) - No Till
2015-Sp	5.7 tons	Bermudagrass (hay), maint. - No Till
2015-Fa	1.8 * ton	Barley (silage) - No Till

Field Name:

Total Acres:	13.00	Usable Acres:	13.00
FSA Number:	913		
Tract:	665		
Location:	Surry	Hydrologic Group:	C
Slope Class:	B		

Riparian buffer width: 334 ft
Distance to stream: 343 ft

Conservation Practices:

Contour planting

Conservation tillage (>30% residue)

P-Index Summary

N-based

Phosphorus Limit method: VA P-Index Calculation

P-Index value = 29.04

%slope: 0.0 Slope Len: 0.0 R factor: 0.0 K factor: 0.0
T factor: 0.0 P factor: 1.0 Cmax: 0.000 Erosion: 1.27 tons/acre

Soil Test Results:

DATE	PH	P	K
Fa-2009	7.2	VH(118 P lbs/acre)	VH(608 K lbs/acre)
Fa-2011	6.1	H(85 P lbs/acre)	H(273 K lbs/acre)
Fa-2012	7.3	H(57 P lbs/acre)	VH(430 K lbs/acre)

Soils:	PERCENT 100	SYMBOL	SOIL SERIES
		33B	Slagle

Field Warnings:

Crop Rotation:

PLANTED	YIELD	CROP NAME
2013-Sp	150.0 bushel(s)	Corn (grain) - No Till
2013-Fa	64.0 bushel(s)	Wheat (grain) - No Till
2014-Su	110.0 bushel(s)	Sorghum (grain) - No Till
2014-Fa	0.0	Rye (cover) - No Till
2015-Sp	150.0 bushel(s)	Corn (grain) - No Till
2015-Fa	64.0 bushel(s)	Wheat (grain) - No Till

Field Name:

Total Acres:	16.20	Usable Acres:	16.20
FSA Number:	913		
Tract:	665		
Location:	Surry	Hydrologic Group:	B
Slope Class:	B		

Riparian buffer width: 300 ft
Distance to stream: 350 ft

Conservation Practices:
Contour planting

Conservation tillage (>30% residue)

P-Index Summary

P-based(1.5)

Phosphorus Limit method: VA P-Index Calculation

P-Index value = 37.82

%slope: 0.0 Slope Len: 0. R factor: 0.0 K factor: 0.0
T factor: 0.0 P factor: 1.0 Cmax: 0.000 Erosion: 4.46 tons/acre

Soil Test Results:

DATE	PH	P	K
Fa-2009	7.2	VH(280 P lbs/acre)	VH(710 K lbs/acre)
Fa-2011	7.7	VH(308 P lbs/acre)	VH(593 K lbs/acre)
Fa-2012	7.7	VH(247 P lbs/acre)	VH(688 K lbs/acre)

Soils:

PERCENT	SYMBOL	SOIL SERIES
40	33B	Slagle
30	35B	Uchee
10	31A	Rains
20	26B	Nansemond

Field Warnings:

Crop Rotation:

PLANTED	YIELD	CROP NAME
2013-Sp	4.7 tons	Bermudagrass (hay), maint. - No Till
2013-Fa	10.1 * ton	Barley (silage) - No Till
2014-Sp	4.7 tons	Bermudagrass (hay), maint. - No Till
2014-Fa	10.1 * ton	Barley (silage) - No Till
2015-Sp	4.7 tons	Bermudagrass (hay), maint. - No Till
2015-Fa	10.1 * ton	Barley (silage) - No Till

Field Name: **E1**
Total Acres: 31.70 Usable Acres: 31.70
FSA Number: 913

Tract: 665
Location: Surry
Slope Class: B Hydrologic Group: C

Riparian buffer width: 500 ft
Distance to stream: 1375 ft

Conservation Practices:

Contour planting
Conservation tillage (>30% residue)

P-Index Summary

P-based(1.5)

Phosphorus Limit method: VA P-Index Calculation

P-Index value = 40.43

%slope: 0.0 Slope Len: 0. R factor: 0.0 K factor: 0.0
T factor: 0.0 P factor: 1.0 Cmax: 0.000 Erosion: 6.0 tons/acre

Soil Test Results:

DATE	PH	P	K
Fa-2009	7.9	VH(183.5 P lbs/acre)	VH(1080.5 K lbs/acre)
Fa-2011	6.7	VH(116 P lbs/acre)	VH(629 K lbs/acre)
Fa-2012	7.9	VH(232 P lbs/acre)	VH(649 K lbs/acre)

Soils: PERCENT SYMBOL SOIL SERIES
60 14B Emporia
40 28B Nevarc Remlik

Field Warnings:

Crop Rotation: CROP NAME
PLANTED YIELD
2013-Sp 3.8 tons Bermudagrass (hay), maint. - No Till
2013-Fa 8.5 * ton Barley (silage) - No Till

2014-Sp 3.8 tons Bermudagrass (hay), maint. - No Till
2014-Fa 8.5 * ton Barley (silage) - No Till
2015-Sp 3.8 tons Bermudagrass (hay), maint. - No Till
2015-Fa 8.5 * ton Barley (silage) - No Till

Tract Name: 667
FSA Number: 913
Location: Surry

Field Name: A1
Total Acres: 15.70 Usable Acres: 15.70
FSA Number: 913
Tract: 667
Location: Surry
Slope Class: A Hydrologic Group: C

Riparian buffer width: 1265 ft
Distance to stream: 2824 ft

Conservation Practices:

Contour planting

Conservation tillage (>30% residue)

P-Index Summary

N-based

Phosphorus Limit method: VA P-Index Calculation

P-Index value = 23.54

%slope: 0.0 Slope Len: 0. R factor: 0.0 K factor: 0.0
T factor: 0.0 P factor: 1.0 Cmax: 0.000 Erosion: 0.6 tons/acre

Soil Test Results:

DATE	PH	P	K	Lab
Fa-2009	5.5	H-(44 P lbs/acre)	H-(177 K lbs/acre)	Virginia Tech
Fa-2011	6.2	H(72 P lbs/acre)	H(262 K lbs/acre)	Virginia Tech
Fa-2012	6.8	H(80 P lbs/acre)	VH(512 K lbs/acre)	Virginia Tech

Soils:	PERCENT	SYMBOL	SOIL SERIES
20	14A	Emporia	
20	17A	Jedburg	
60	10A	Craven	

Field Warnings:

Crop Rotation:	PLANTED	YIELD	CROP NAME
2013-Sp	92.0 bushel(s)	Rye (cover)	Sorghum (grain) - No Till
2013-Fa	0.0	Rye	(cover) - No Till
2014-Sp	112.0 bushel(s)	Corn (grain)	- No Till
2014-Fa	48.0 bushel(s)	Wheat (grain)	- No Till
2015-Su	92.0 bushel(s)	Sorghum (grain)	- No Till
2015-Fa	0.0	Rye (cover)	- No Till
2016-Sp	112.0 bushel(s)	Corn (grain)	- No Till

Field Name:	A2		
Total Acres:	12.80	Usable Acres:	12.80
FSA Number:	913		
Tract:	667		
Location:	Surry		
Slope Class:	B	Hydrologic Group:	B

Riparian buffer width: 1285 ft
Distance to stream: 2345 ft

Conservation Practices:

Contour planting

P-Index Summary
N-based
Phosphorus Limit method: VA P-Index Calculation
P-Index value = 26.36

%slope: 0.0 Slope Len: 0. R factor: 0.0 K factor: 0.0

T factor: 0.0 P factor: 1.0 Cmax: 0.000 Erosion: 1.32 tons/acre

Soil Test Results:

DATE	PH	P	K
Fa-2009	7.3	VH(307 P lbs/acre)	VH(961 K lbs/acre)
Fa-2011	7.3	VH(205 P lbs/acre)	VH(793 K lbs/acre)
Fa-2012	6.9	VH(96 P lbs/acre)	VH(459 K lbs/acre)

Soils:

PERCENT	SYMBOL	SOIL SERIES
25	26B	Nansemond
75	28B	Nevarc Remlik

Field Warnings:

Crop Rotation:

PLANTED	YIELD	CROP NAME
2013-Sp	97.5 bushel(s)	Sorghum (grain) - No Till
2013-Fa	0.0	Rye (cover) - No Till
2014-Sp	115.0 bushel(s)	Corn (grain) - No Till
2014-Fa	54.4 bushel(s)	Wheat (grain) - No Till
2015-Su	97.5 bushel(s)	Sorghum (grain) - No Till
2015-Fa	0.0	Rye (cover) - No Till

Field Name:

A3
Total Acres: 15.50 Usable Acres: 15.50

FSA Number: 913

Tract: 667

Location: Surry

Slope Class: B Hydrologic Group: B

Riparian buffer width: 873 ft
Distance to stream: 873 ft

Conservation Practices:

Contour planting

P-Index Summary

N-based

Phosphorus Limit method: VA P-Index Calculation

P-Index value = 72.84

%slope: 0.0 Slope Len: 0. R factor: 0.0 K factor: 0.0
T factor: 0.0 P factor: 1.0 Cmax: 0.000 Erosion: 6.55 tons/acre

Soil Test Results:

DATE	PH	P	K
Fa-2009	6.5	VH(303 P lbs/acre)	VH(883 K lbs/acre)
Fa-2011	7.2	VH(212 P lbs/acre)	VH(668 K lbs/acre)
Fa-2012	6.9	H+(96 P lbs/acre)	VH(459 K lbs/acre)

Soils:	PERCENT	SYMBOL	SOIL SERIES
	35	28C	Nevarc Remlik
	60	28B	Nevarc Remlik
	5	2A	Bbb

Crop Rotation:

Environmentally Sensitive Soils due to:

Soils with potential for leaching based on soil texture or excessive drainage

Soils with high potential for subsurface lateral flow based on soil texture and poor drainage

Crop Rotation:

PLANTED	YIELD	CROP NAME
2013-Sp	1.9 tons	Bermudagrass (hay), maint. - No Till
2013-Fa	7.8 * ton	Barley (silage) - No Till
2014-Sp	1.9 tons	Bermudagrass (hay), maint. - No Till
2014-Fa	7.8 * ton	Barley (silage) - No Till
2015-Sp	1.9 tons	Bermudagrass (hay), maint. - No Till
2015-Fa	7.8 * ton	Barley (silage) - No Till

Field Name: B1
Total Acres: 17.60 **Usable Acres:** 17.60
FSA Number: 913
Tract: 667
Location:
Slope Class: B **Hydrologic Group:** B

Riparian buffer width: 782 ft
Distance to stream: 2875 ft

Conservation Practices:
Contour planting

P-Index Summary
N-based
Phosphorus Limit method: VA P-Index Calculation
P-Index value = 26.81

%slope: 0.0 Slope Len: 0. R factor: 0.0 K factor: 0.0
T factor: 0.0 P factor: 1.0 Cmax: 0.000 Erosion: 1.02 tons/acre

Soil Test Results:
DATE **PH** **P** **K**
Fa-2009 7.4 VH(199 P lbs/acre) VH(745 K lbs/acre)
Fa-2011 7.2 VH(168 P lbs/acre) VH(573 K lbs/acre)
Fa-2012 7.2 VH(153 P lbs/acre) VH(597 K lbs/acre)

Soils:
PERCENT **SYMBOL** **SOIL SERIES**
40 33A Slagle
40 35B Uchee
20 14B Emporia

Lab
Virginia Tech
Virginia Tech
Virginia Tech

Field Warnings:
Environmentally Sensitive Soils due to:

Soils with potential for leaching based on soil texture or excessive drainage

Crop Rotation:

PLANTED	YIELD	CROP NAME
2013-Sp	128.0 bushel(s)	Corn (grain) - No Till
2013-Fa	59.2 bushel(s)	Wheat (grain) - No Till
2014-Su	100.0 bushel(s)	Sorghum (grain) - No Till
2014-Fa	0.0	Rye (cover) - No Till
2015-Sp	128.0 bushel(s)	Corn (grain) - No Till
2015-Fa	59.2 bushel(s)	Wheat (grain) - No Till

Field Name: B2

Total Acres: 20.60 Usable Acres: 20.60

FSA Number: 913

Tract: 667

Location: Surry

Slope Class: B Hydrologic Group: C

Riparian buffer width: 873 ft
Distance to stream: 1230 ft

Conservation Practices:

Contour planting

P-Index Summary

N-based

Phosphorus Limit method: VA P-Index Calculation
P-Index value = 59.39

%slope: 0.0	Slope Len: 0.	R factor: 0.0	K factor: 0.0
T factor: 0.0	P factor: 1.0	Cmax: 0.000	Erosion: 5.29 tons/acre

Soil Test Results:

DATE	PH	P	K
Fa-2009	7.2	VH(267 P lbs/acre)	VH(922 K lbs/acre)
Fa-2011	8.0	VH(169 P lbs/acre)	VH(1142 K lbs/acre)

Lab
Virginia Tech
Virginia Tech

Fa-2012 7.6 H+(102 P lbs/acre)

Virginia Tech

Soils:	PERCENT	SYMBOL	SOIL SERIES
	30	14B	Emporia
	30	12B	Craven Slagle
	30	31A	Rains
	10	33B	Slagle

Field Warnings:

CROP ROTATION:	PLANTED	YIELD
2013-Sp		2.9 tons
2013-Fa		6.5 * ton
2014-Sp		2.9 tons
2014-Fa		6.5 * ton
2015-Sp		2.9 tons
2015-Fa		6.5 * ton

CROP NAME
Bermudagrass (hay), maint. - No Till
Barley (silage) - No Till
Bermudagrass (hay), maint. - No Till
Barley (silage) - No Till
Bermudagrass (hay), maint. - No Till
Barley (silage) - No Till

Application Summary Report

2013: Corn (grain)

Tract	Field	Acres	Manure Rate and Type (Season)	Broadcast Commercial	Banded Commercial	Topdress Commercial	Lime (tons)
612	E2	49.0	66.3k Wean (Sp) 44.1k Wean (Su)			10-0-0(Sp) 20-0-0(Su)	
665	C2	13.0	77.4k Wean (Sp) 77.3k Wean (Su)			10-0-0(Sp)	20-0-0(Su)
667	B1	17.6	66.3k Wean (Sp) 44.1k Wean (Su)			10-0-0(Sp)	20-0-0(Su)

2013: Wheat (grain)

Tract	Field	Acres	Manure Rate and Type (Season)	Broadcast Commercial	Banded Commercial	Topdress Commercial	Lime (tons)
612	E2	49.0	41.8k Wean (Fa) 30.1k Wean (Wi) 30.0k Wean (Sp)				
665	C2	13.0	32.7k Wean (Fa) 32.7k Wean (Wi) 35.9k Wean (Sp)				
667	B1	17.6	33.0k Wean (Fa) 33.0k Wean (Wi) 36.4k Wean (Sp)				

2013: Sorghum (grain)

Tract	Field	Acres	Manure Rate and Type (Season)	Broadcast Commercial	Banded Commercial	Topdress Commercial	Lime (tons)
612	F	30.7	44.2k Wean (Sp)			10-0-0(Sp) 20-0-0(Su)	
	G	9.6	44.2k Wean (Sp) 22.0k Wean (Su)			10-0-0(Sp)	20-0-0(Su)
667	A1	15.7	44.2k Wean (Sp) 22.0k Wean (Su)			10-0-0(Sp)	20-0-0(Su)

	A2	12.8	49.7k Wean (Sp) 27.6k Wean (Su)		10-0-0(Sp)	20-0-0(Su)
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2013: Bermudagrass (hay), maint.

Tract	Field	Acres	Manure Rate and Type (Season)	Broadcast Commercial	Banded Commercial	Topdress Commercial	Lime (tons)
665	C1	18.3	55.0k Wean (Sp) 57.0k Wean (Su)				
	D	16.2	55.0k Wean (Sp) 57.0k Wean (Su)				
	E1	31.7	55.0k Wean (Sp) 57.0k Wean (Su)				
667	A3	15.5	141.0k Wean (Sp) 118.7k Wean (Su)				
	B2	20.6	129.8k Wean (Sp) 129.8k Wean (Su)				

2013: Barley (silage)

Tract	Field	Acres	Manure Rate and Type (Season)	Broadcast Commercial	Banded Commercial	Topdress Commercial	Lime (tons)
667	A3	15.5	38.5k Wean (Fa) 43.3k Wean (Wi)				

2014: Sorghum (grain)

Tract	Field	Acres	Manure Rate and Type (Season)	Broadcast Commercial	Banded Commercial	Topdress Commercial	Lime (tons)
612	E2	49.0	99.4k Wean (Su)			10-0-0(Su)	
665	C2	13.0	110.4k Wean (Su)			10-0-0(Su)	
667	B1	17.6	77.3k Wean (Su)			10-0-0(Su)	20-0-0(Su)

2014: Corn (grain)

Tract	Field	Acres	Manure Broadcast	Banded	Topdress	Lime
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			Rate and Type (Season)	Commercial	Commercial (tons)
612	F	30.7	47.6k Wean (Sp) 47.6k Wean (Su)		10-0-0(Sp)
	G	9.6	47.6k Wean (Sp) 47.6k Wean (Su)		10-0-0(Sp)
667	A1	15.7	58.6k Wean (Sp) 58.6k Wean (Su)		10-0-0(Sp)
	A2	12.8	58.3k Wean (Sp) 58.3k Wean (Su)		10-0-0(Sp)

2014: Wheat (grain)

	Field	Acres	Manure Rate and Type (Season)	Broadcast Commercial	Banded Commercial	Topdress Commercial	Lime (tons)
612	F	30.7	41.7k Wean (Fa) 30.1k Wean (Wi) 30.1k Wean (Sp)				
	G	9.6	41.7k Wean (Fa) 30.1k Wean (Wi) 30.1k Wean (Sp)				
667	A1	15.7	32.7k Wean (Fa) 32.7k Wean (Wi) 35.9k Wean (Sp)				
	A2	12.8	32.6k Wean (Fa) 32.6k Wean (Wi) 35.9k Wean (Sp)				

2014: Bermudagrass (hay), maint.

	Field	Acres	Manure Rate and Type (Season)	Broadcast Commercial	Banded Commercial	Topdress Commercial	Lime (tons)
665	C1	18.3	55.0k Wean (Sp) 57.0k Wean (Su)				
	D	16.2	55.0k Wean (Sp) 57.0k Wean (Su)				
	E1	31.7	55.0k Wean (Sp)				

				57.0k Wean (Su)
667	A3	15.5	120.3k Wean (Sp)	
	B2	20.6	120.3k Wean (Su)	

2014: Barley (silage)

Tract	Field	Acres	Manure Rate and Type (Season)	Broadcast Commercial	Banded Commercial	Topdress Commercial	Lime (tons)
667	A3	15.5	38.5k Wean (Fa) 43.3k Wean (Wi)				

2015: Corn (grain)

Tract	Field	Acres	Manure Rate and Type (Season)	Broadcast Commercial	Banded Commercial	Topdress Commercial	Lime (tons)
612	E2	49.0	60.6k Wean (Sp) 38.9k Wean (Su)		10-0-0(Sp)	20-0-0(Su)	
665	C2	13.0	71.0k Wean (Sp) 48.9k Wean (Su)		10-0-0(Sp)	20-0-0(Su)	
667	B1	17.6	60.5k Wean (Sp) 60.5k Wean (Su)		10-0-0(Sp)		

2015: Wheat (grain)

Tract	Field	Acres	Manure Rate and Type (Season)	Broadcast Commercial	Banded Commercial	Topdress Commercial	Lime (tons)
612	E2	49.0	41.7k Wean (Fa) 28.1k Wean (Wi) 28.0k Wean (Sp)				
665	C2	13.0	31.2k Wean (Fa) 31.2k Wean (Wi) 34.3k Wean (Sp)				
667	B1	17.6	31.7k Wean (Fa) 31.7k Wean (Wi)				

34.8k Wean (Sp)

2015: Sorghum (grain)

Tract	Field	Acres	Manure Rate and Type (Season)	Broadcast Commercial	Banded Commercial	Topdress Commercial	Lime (tons)
612	F	30.7	66.2k Wean (Su)		10-0-0(Su)	20-0-0(Su)	
	G	9.6	66.2k Wean (Su)		10-0-0(Su)	20-0-0(Su)	
667	A1	15.7	66.2k Wean (Su)		10-0-0(Su)	20-0-0(Su)	
	A2	12.8	77.3k Wean (Su)		10-0-0(Su)	20-0-0(Su)	

2015: Bermudagrass (hay), maint.

Tract	Field	Acres	Manure Rate and Type (Season)	Broadcast Commercial	Banded Commercial	Topdress Commercial	Lime (tons)
665	C1	18.3	55.0k Wean (Sp) 57.0k Wean (Su)				
	D	16.2	55.0k Wean (Sp) 57.0k Wean (Su)				
667	E1	31.7	55.0k Wean (Sp) 57.0k Wean (Su)				
	A3	15.5	116.7k Wean (Sp) 116.6k Wean (Su)				
	B2	20.6	121.0k Wean (Sp) 121.2k Wean (Su)				

2015: Barley (silage)

Tract	Field	Acres	Manure Rate and Type (Season)	Broadcast Commercial	Banded Commercial	Topdress Commercial	Lime (tons)
667	A3	15.5	38.5k Wean (Fa) 43.3k Wean (Wi)				

2016: Corn (grain)

Tract	Field	Acres	Manure Broadcast	Banded	Topdress	Lime

			Rate and Type (Season)	Commercial	Commercial	Commercial (tons)
667	A1	15.7	110.1k Wean (Sp)	10-0-0(Sp)		

Manure Spreading Summary

Season	Manure	Rate/ac	Tract	Field	Acres	Crop	Total in Field	Running Total
2013Sp	Wean to Finish	66.3 kgals	612	E2	49	Corn (grain)	3249 kgals	3249 kgals
		44.2 kgals	612	F	31	Sorghum (grain)	1357 kgals	4606 kgals
		44.2 kgals	612	G	10	Sorghum (grain)	424 kgals	5030 kgals
		55.0 kgals	665	C1	18	Bermudagrass (hay), maint	1007 kgals	6036 kgals
		77.4 kgals	665	C2	13	Corn (grain)	1006 kgals	7042 kgals
		55.0 kgals	665	D	16	Bermudagrass (hay), maint	891 kgals	7933 kgals
		55.0 kgals	665	E1	32	Bermudagrass (hay), maint	1744 kgals	9677 kgals
		44.2 kgals	667	A1	16	Sorghum (grain)	694 kgals	10370 kgals
		49.7 kgals	667	A2	13	Sorghum (grain)	636 kgals	11007 kgals
		141.0 kgals	667	A3	16	Bermudagrass (hay), maint	2186 kgals	13192 kgals
		66.3 kgals	667	B1	18	Corn (grain)	1167 kgals	14359 kgals
		129.8 kgals	667	B2	21	Bermudagrass (hay), maint	2674 kgals	17034 kgals
2013Su	Wean to Finish	44.1 kgals	612	E2	49	Corn (grain)	2161 kgals	2161 kgals
		22.0 kgals	612	F	31	Sorghum (grain)	675 kgals	2836 kgals
		22.0 kgals	612	G	10	Sorghum (grain)	211 kgals	3048 kgals
		57.0 kgals	665	C1	18	Bermudagrass (hay), maint	1043 kgals	4091 kgals
		77.3 kgals	665	C2	13	Corn (grain)	1005 kgals	5096 kgals
		57.0 kgals	665	D	16	Bermudagrass (hay), maint	923 kgals	6019 kgals
		57.0 kgals	665	E1	32	Bermudagrass (hay), maint	1807 kgals	7826 kgals
		22.0 kgals	667	A1	16	Sorghum (grain)	345 kgals	8171 kgals
		27.6 kgals	667	A2	13	Sorghum (grain)	354 kgals	8525 kgals
		118.7 kgals	667	A3	16	Bermudagrass (hay), maint	1839 kgals	10364 kgals
		44.1 kgals	667	B1	18	Corn (grain)	776 kgals	11140 kgals
		129.8 kgals	667	B2	21	Bermudagrass (hay), maint	2674 kgals	13815 kgals
2013Fa	Wean to Finish	41.8 kgals	612	E2	49	Wheat (grain)	2046 kgals	2046 kgals
		32.7 kgals	665	C2	13	Wheat (grain)	425 kgals	2471 kgals
		38.5 kgals	667	A3	16	Barley (silage)	597 kgals	3068 kgals
		33.0 kgals	667	B1	18	Wheat (grain)	581 kgals	3648 kgals
2013Wi	Wean to Finish	30.1 kgals	612	E2	49	Wheat (grain)	1475 kgals	1475 kgals
		32.7 kgals	665	C2	13	Wheat (grain)	425 kgals	1900 kgals
		43.3 kgals	667	A3	16	Barley (silage)	671 kgals	2571 kgals
		33.0 kgals	667	B1	18	Wheat (grain)	581 kgals	3151 kgals
2014Sp	Wean to Finish	30.0 kgals	612	E2	49	Wheat (grain)	1470 kgals	1470 kgals
		47.6 kgals	612	F	31	Corn (grain)	1460 kgals	2930 kgals
		47.6 kgals	612	G	10	Corn (grain)	457 kgals	3387 kgals
		55.0 kgals	665	C1	18	Bermudagrass (hay), maint	1007 kgals	4393 kgals
		35.9 kgals	665	C2	13	Wheat (grain)	467 kgals	4860 kgals
		55.0 kgals	665	D	16	Bermudagrass (hay), maint	891 kgals	5751 kgals
		55.0 kgals	665	E1	32	Bermudagrass (hay), maint	1744 kgals	7494 kgals
		58.6 kgals	667	A1	16	Corn (grain)	920 kgals	8414 kgals
		58.3 kgals	667	A2	13	Corn (grain)	747 kgals	9161 kgals

Season	Manure	Rate/ac	Tract	Field	Acres	Crop	Total In Field	Running Total
2014Sp	Wean to Finish	60.6 kgals	612	E2	49	Sorghum (grain)	2969 kgals	2969 kgals
		30.1 kgals	612	F	31	Corn (grain)	925 kgals	3894 kgals
		30.1 kgals	612	G	10	Wheat (grain)	289 kgals	4184 kgals
		55.0 kgals	665	C1	18	Bermudagrass (hay), maint	1007 kgals	5190 kgals
		71.0 kgals	665	C2	13	Corn (grain)	924 kgals	6114 kgals
		55.0 kgals	665	D	16	Bermudagrass (hay), maint	891 kgals	7005 kgals
		55.0 kgals	665	E1	32	Bermudagrass (hay), maint	1744 kgals	8748 kgals
		35.9 kgals	667	A1	16	Wheat (grain)	564 kgals	9312 kgals
		35.9 kgals	667	A2	13	Bermudagrass (hay), maint	460 kgals	9772 kgals
		116.7 kgals	667	A3	16	Wheat (grain)	1809 kgals	11581 kgals
		60.5 kgals	667	B1	18	Corn (grain)	1064 kgals	12645 kgals
		121.0 kgals	667	B2	21	Bermudagrass (hay), maint	2493 kgals	15137 kgals
				E2	49	Corn (grain)	1908 kgals	1908 kgals
				F	31	Sorghum (grain)	2032 kgals	3940 kgals
				G	10	Sorghum (grain)	636 kgals	4576 kgals
				C1	18	Bermudagrass (hay), maint	1043 kgals	5619 kgals
				C2	13	Corn (grain)	636 kgals	6255 kgals
				D	16	Bermudagrass (hay), maint	923 kgals	7179 kgals
				E1	32	Bermudagrass (hay), maint	1807 kgals	8985 kgals
				A1	16	Sorghum (grain)	1039 kgals	10025 kgals
				A2	13	Sorghum (grain)	990 kgals	11015 kgals
2014Su	Wean to Finish	99.4 kgals	612	E2	49	Sorghum (grain)	4873 kgals	4873 kgals
		47.6 kgals	612	F	31	Corn (grain)	1460 kgals	6332 kgals
		47.6 kgals	612	G	10	Corn (grain)	456 kgals	6789 kgals
		57.0 kgals	665	C1	18	Bermudagrass (hay), maint	1043 kgals	7832 kgals
		110.4 kgals	665	C2	13	Sorghum (grain)	1435 kgals	9267 kgals
		57.0 kgals	665	D	16	Bermudagrass (hay), maint	923 kgals	10191 kgals
		57.0 kgals	665	E1	32	Bermudagrass (hay), maint	1807 kgals	11997 kgals
		58.6 kgals	667	A1	16	Corn (grain)	920 kgals	12918 kgals
		58.3 kgals	667	A2	13	Corn (grain)	747 kgals	13664 kgals
		120.3 kgals	667	A3	16	Bermudagrass (hay), maint	1865 kgals	15529 kgals
		77.3 kgals	667	B1	18	Sorghum (grain)	1361 kgals	16890 kgals
		123.5 kgals	667	B2	21	Bermudagrass (hay), maint	2545 kgals	19435 kgals
2014Fa	Wean to Finish	41.7 kgals	612	F	31	Wheat (grain)	1280 kgals	1280 kgals
		41.7 kgals	612	G	10	Wheat (grain)	400 kgals	1681 kgals
		32.7 kgals	667	A1	16	Wheat (grain)	514 kgals	2194 kgals
		32.6 kgals	667	A2	13	Wheat (grain)	4117 kgals	2611 kgals
		38.5 kgals	667	A3	16	Barley (silage)	597 kgals	3208 kgals
2014Wi	Wean to Finish	30.1 kgals	612	F	31	Wheat (grain)	925 kgals	925 kgals
		30.1 kgals	612	G	10	Wheat (grain)	289 kgals	1215 kgals
		32.7 kgals	667	A1	16	Wheat (grain)	514 kgals	1728 kgals
		32.6 kgals	667	A2	13	Wheat (grain)	4117 kgals	2145 kgals
		43.3 kgals	667	A3	16	Barley (silage)	671 kgals	2816 kgals

		116.6 kgals	667	A3	16	Bermudagrass (hay), maint	1808 kgals
		60.5 kgals	667	B1	18	Corn (grain)	1064 kgals
		121.2 kgals	667	B2	21	Bermudagrass (hay), maint	2497 kgals
				E2	49	Wheat (grain)	2043 kgals
				C2	13	Wheat (grain)	406 kgals
				A3	16	Barley (silage)	597 kgals
				B1	18	Wheat (grain)	558 kgals
				E2	49	Wheat (grain)	1377 kgals
				C2	13	Wheat (grain)	406 kgals
				A3	16	Barley (silage)	671 kgals
				B1	18	Wheat (grain)	558 kgals
							3012 kgals

Season	Manure	Rate/ac	Tract	Field	Acres	Crop	Total in Field	Running Total
2016Sp	Wean to Finish	28.0 kgals	612	E2	49	Wheat (grain)	1372 kgals	1372 kgals
		34.3 kgals	665	C2	13	Wheat (grain)	446 kgals	1818 kgals
		110.1 kgals	667	A1	16	Corn (grain)	1728 kgals	3546 kgals
		34.8 kgals	667	B1	18	Wheat (grain)	612 kgals	4158 kgals